ENGINEERING NEWS-RECORD

EIGHTIETH YEAR OF PUBLICATION

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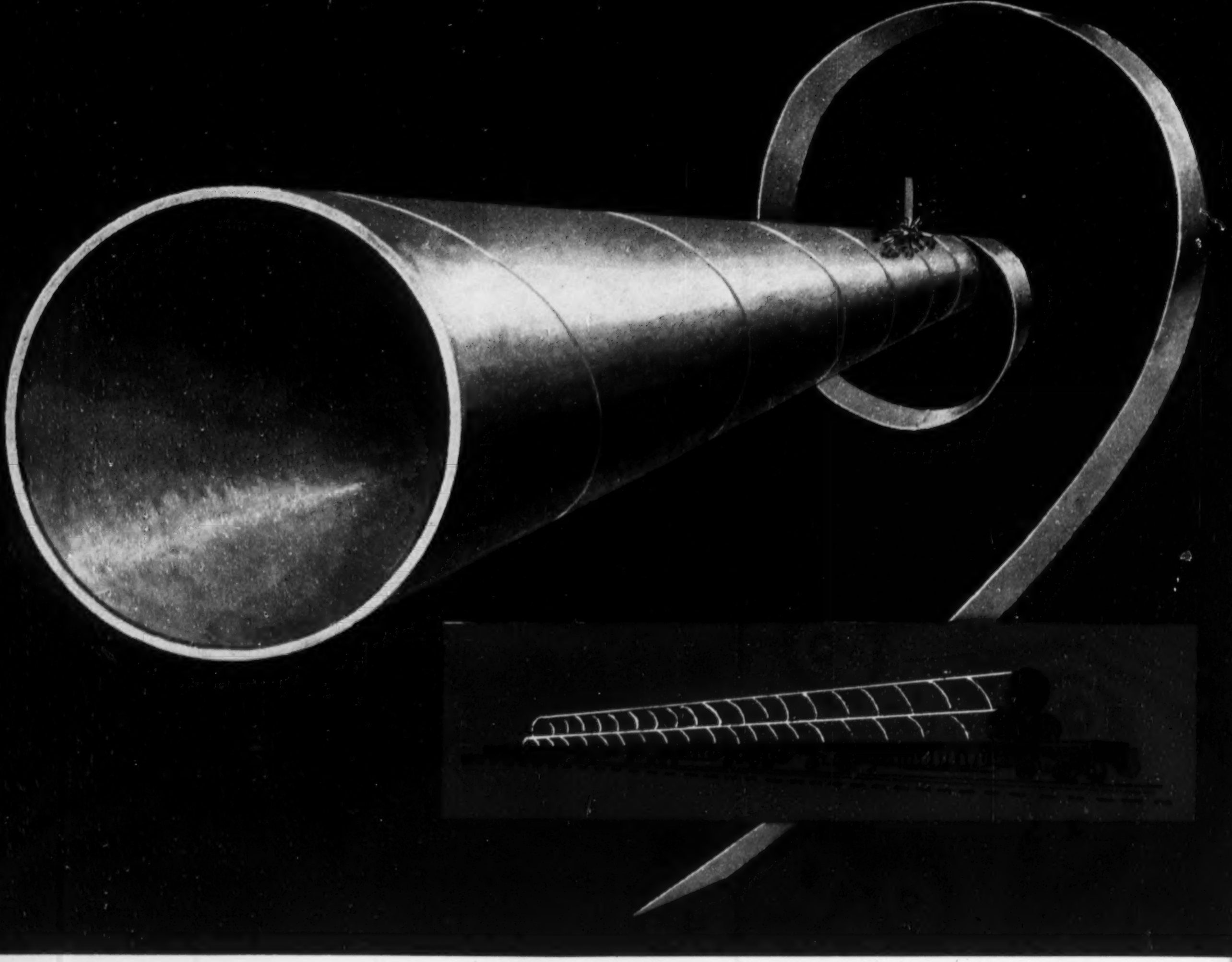

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Probably the longest continuous pipe piles ever made were those shipped to the Straits of Mackinac Bridge project, which will link Michigan's two great peninsulas. They were 93-foot sections of Armco Spiral Welded Pipe.

Not many years ago piling and pipe line contractors had to work with comparatively short length pipe. This meant they had more pieces to haul and handle, and more splicing to do at the job site. Then Armco engineers developed and perfected pipe machines that would automatically convert coils of steel into pipe of any desired length. After being spirally wound and welded into a continuous tube, the pipe was cut to the customer's specific length requirements. Pipe lengths of 50 feet and more became common. Installation was easier.

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Armco Spiral Welded Pipe is just one of more than 20 construction products developed by Armco to meet specific needs. Today, such service-proved Armco Products as corrugated metal drainage structures, water control gates, bin-type retaining walls, beam-type guardrail, steel buildings, and many others are available from conveniently located plants and sales offices throughout North America. Each product is backed by almost 50 years of research and experience in making and fabricating steel. Helpful, authoritative data are yours for the asking. Write us about *your* drainage or construction problem.

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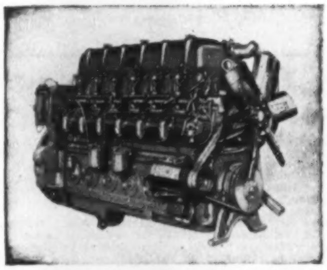

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Robert F. Boger

PUBLISHER

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E. J. PETRILLO, Inc does a business!

NORTH WEST
The TWENTIETH NORTHWEST for E. J. Petrillo, Inc. Yonkers, N. Y.
The Northwest machines illustrated here show various classes of work being done by E. J. Petrillo, Inc., on the New York Thruway

—and you have to have good equipment—money making equipment, for the wide range of work they handle. That's why they are taking delivery on three more Northwest Model 80-Ds. E. J. Petrillo, Inc., have taken delivery on eight Northwests in 1954 and they don't buy equipment because of the color it's painted—they *expect* and *get* service.

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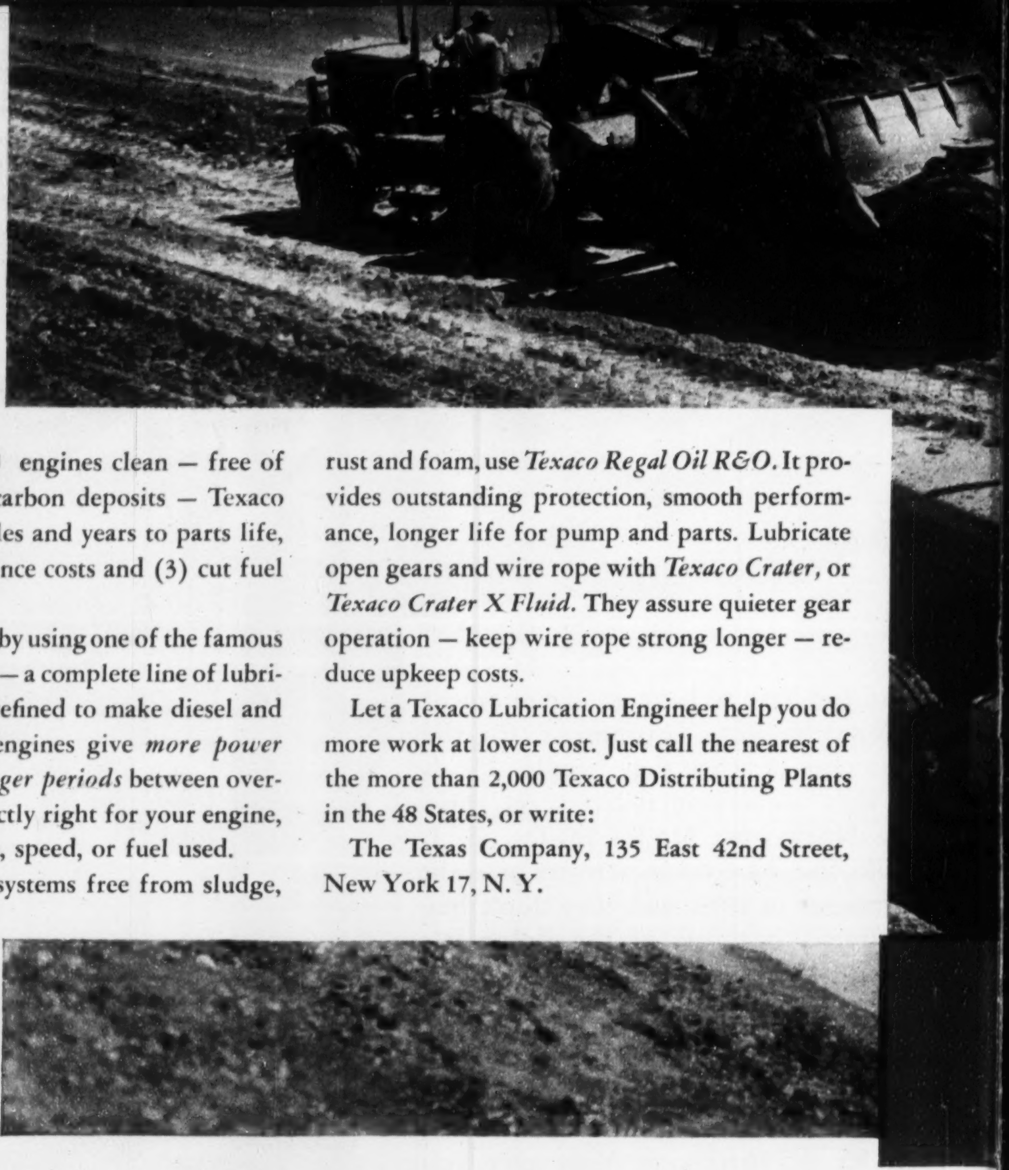

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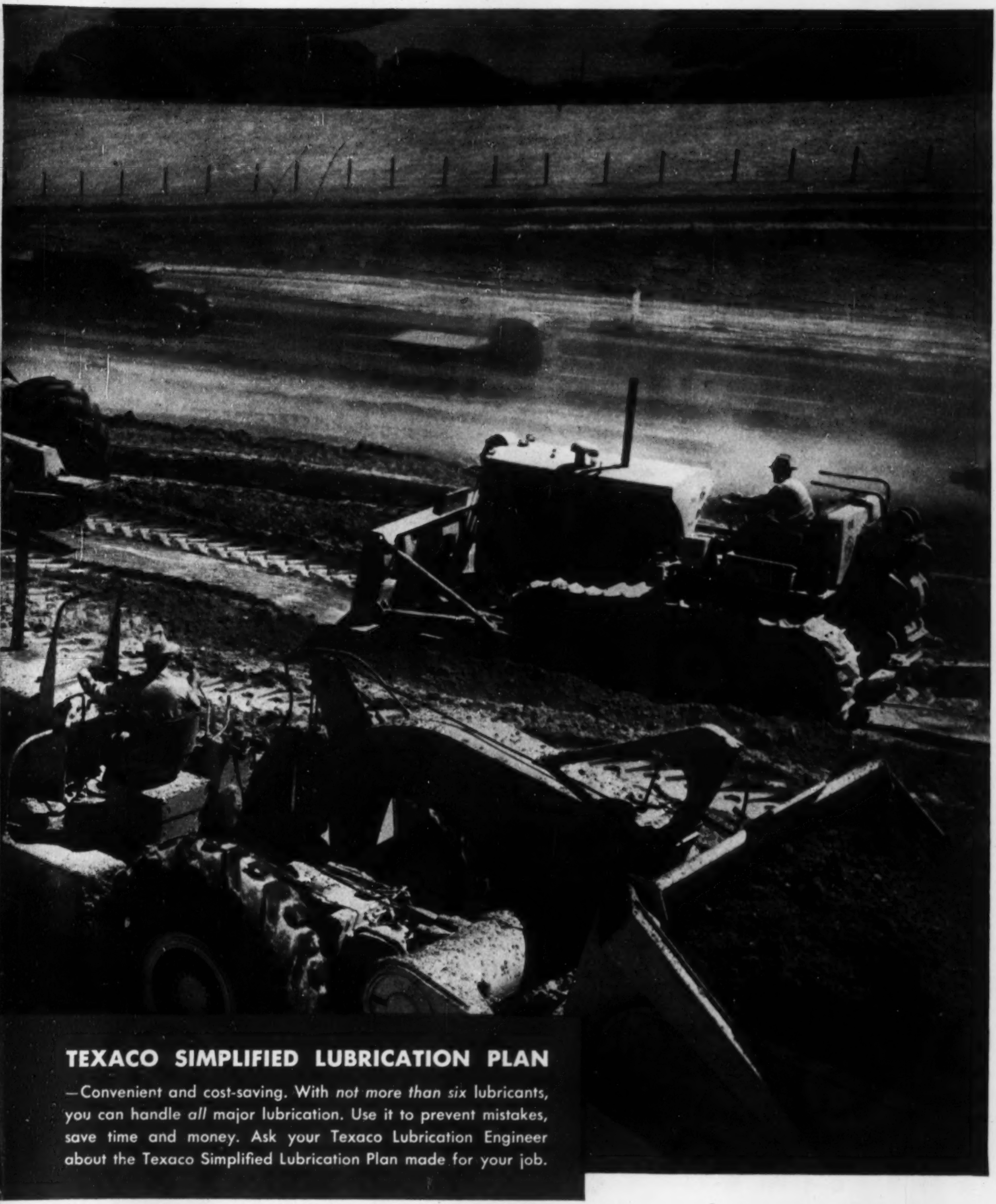

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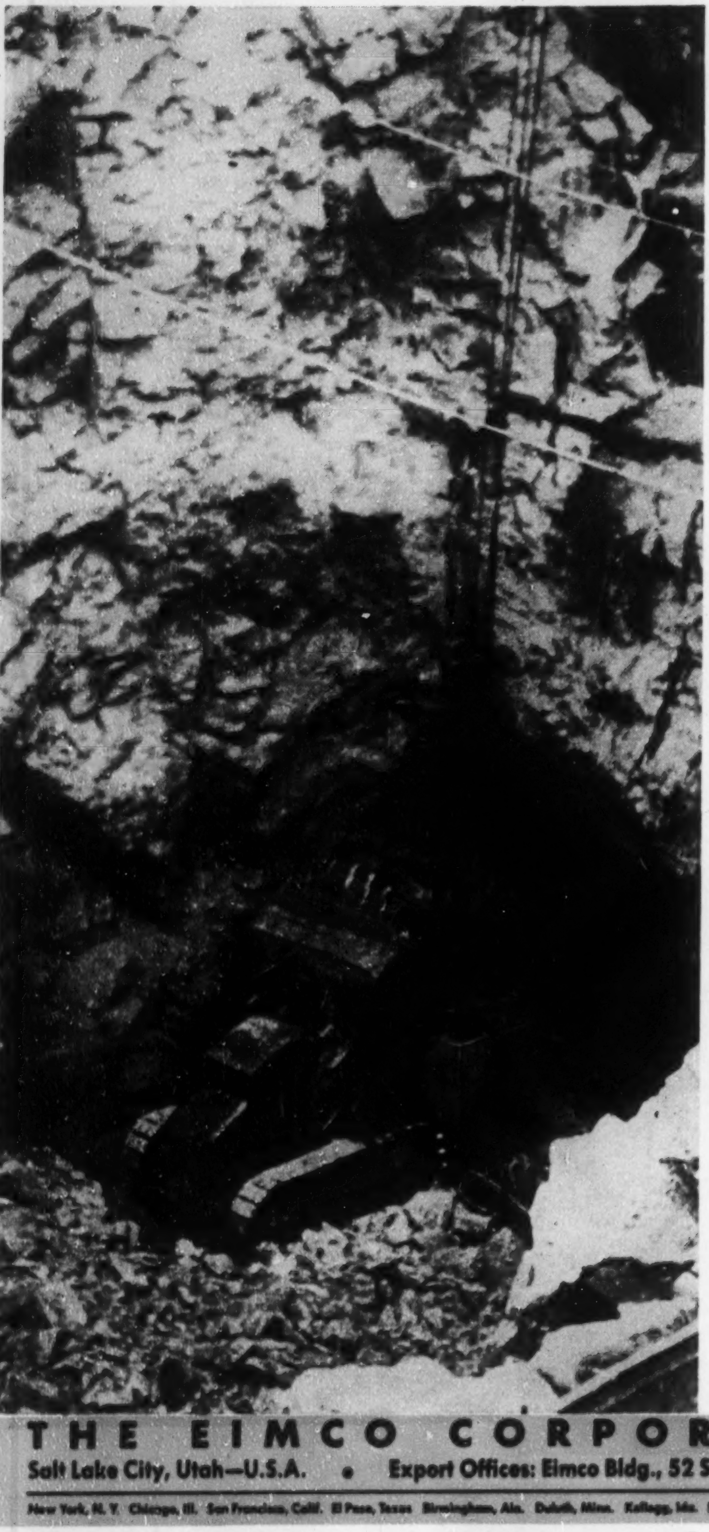

SHAFT SINKING WITH EIMCO TRACTORS

Eimco 105 tractors with excavating attachment are being used for mucking hard rock shafts on the Quebec Hydro job. The 105's are lowered into the shafts and dig their way down to the bottom of the blasted rock.

This is the toughest kind of work for any excavating equipment—only the Eimco was equal to the job. During the long winter, work continued on the job which required all types of well known heavy construction equipment of many makes and when spring came and the accounting was done, the Eimcos showed a higher percentage of availability than any similar equipment.

Eimco equipment is built for these harder than usual jobs. Heavy steel castings are used throughout on the 105. Greater maneuverability makes it usable on jobs where confined areas only are workable. Being able to dig below grade makes it practical in shaft work.

Wherever the going is tough — you'll find the best equipment for tractor, bulldozer or excavator work is the Eimco 105.

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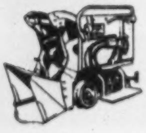

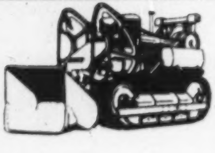

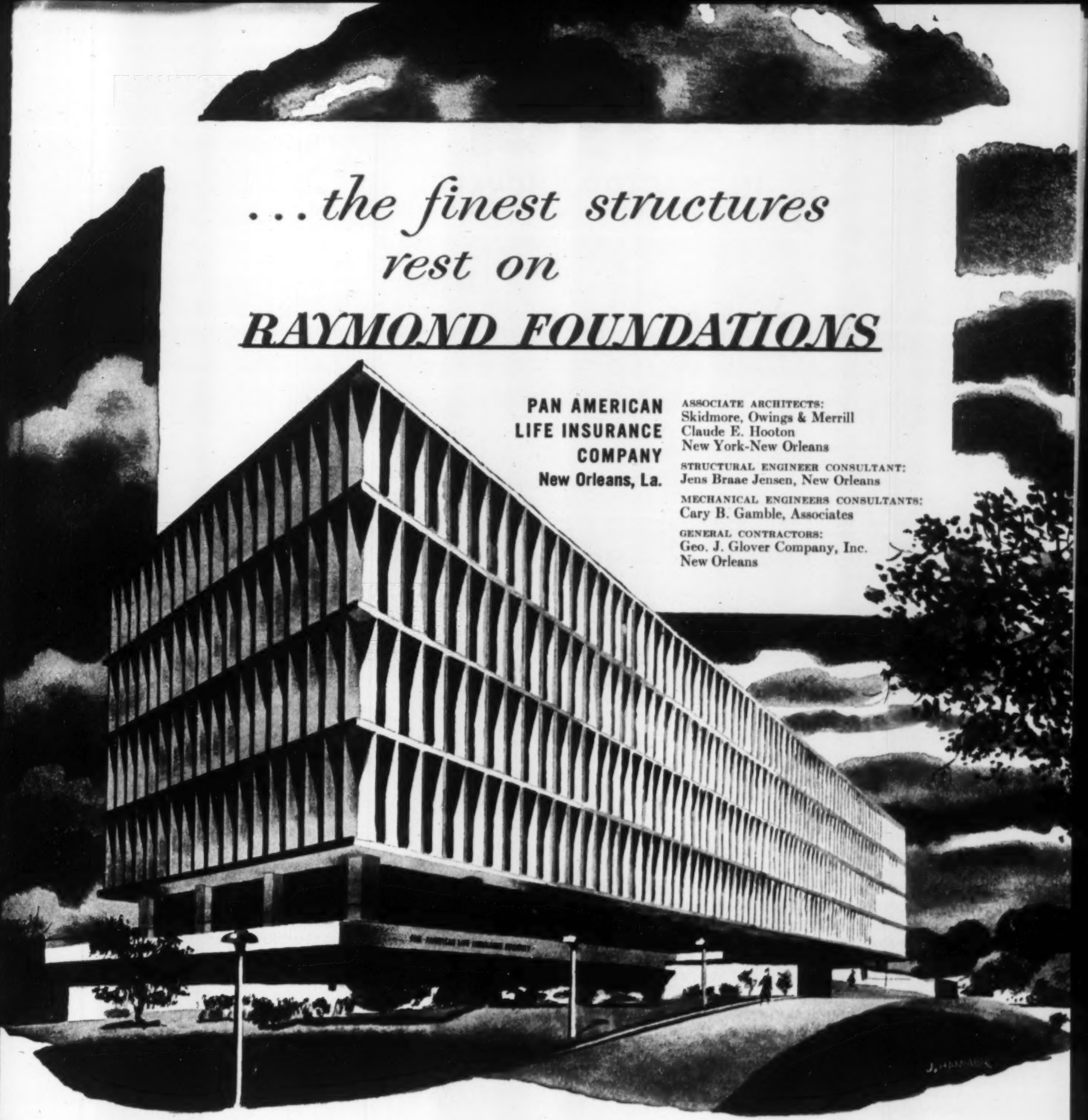

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ESCO box points put more DIG IN TRACTOR SHOVELS

— says E. A. LaChapelle, Excavating Contractor, Vancouver, Washington

Digging efficiency goes up— Bucket lip wear is cut

"Adding *ESCO* Box Points to my tractor shovel increased loading and dozing performance more than 20%—without putting more wear on the shovel," says E. A. LaChapelle, Excavating Contractor, of Vancouver, Washington.

"Box points do a much better job than the solid teeth they replaced. I get real operating economy in all types of hard-to-move-material. The points break up the material as they bite into it, so the shovel comes away with a full load every time. The heavy-duty shank on an *ESCO* box point adapter just doesn't break off. Box points make the tractor shovel a good tool for brush clearing, too."

Put more dig in *your* tractor shovel. Your *ESCO* dealer has box points and heavy-duty adapters to fit *any* standard tractor shovel. See him today, or write for Bulletin 187-A, Electric Steel Foundry Co., 2142 N.W. 25th Ave., Portland, Ore.

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READER COMMENT

Bid form questioned

Sir: Very divided feelings are aroused in us by the article "Equipment Selection Quandary" by Consoer and Smith (ENR July 22, p. 35). We welcome any effort to improve the present situation regarding equipment specification and bidding. As relatively new participants in waterworks and sewage works activity, after a business history devoted entirely to industrial instrumentation, some of the practices we have found have seemed quite unsatisfactory. We feel an obligation to encourage any progress and to assist that progress rather than to criticize.

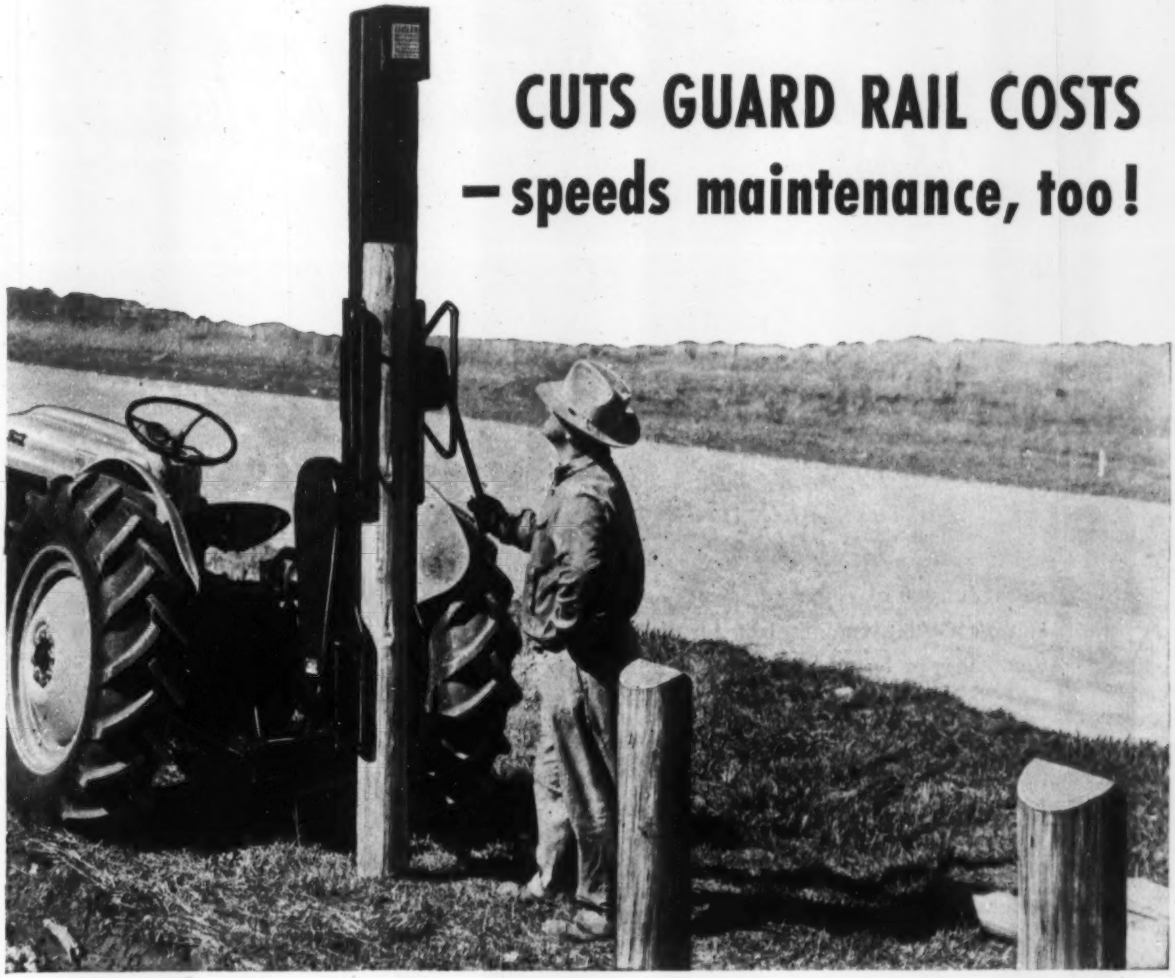
However, we consider the Consoer-Smith suggestion unrealistic and not capable of bringing the improvement which it seeks. First since the contractor is barred from obtaining any financial benefit in case he suggests a piece of equipment not on the list (but in fact is put to an additional expense because he must argue his suggestion) any reasonable possibility of any contractor promoting progress is eliminated. No matter how advantageous a contractor's suggestion might be as to first cost or maintenance and operation savings, he goes unrewarded. Contractors bidding to Consoer, Townsend & Associates have called this to our attention.

We feel it is naive to suggest, "The owner is left as the sole and final authority on the matter of making a decision regarding the particular brands of equipment." It has been our experience that owners are generally—and quite properly—unwilling to make equipment decisions, particularly if these seem contrary to the wishes of the consulting engineer, whether these wishes are stated or implied. We have found owners regard it as part of the consultant's duty to advise definitely or select outright the brand of equipment to be used.

We think Consoer and Smith are wrong in disparaging functional specifications. We believe it is because functional specifications have been haphazard—often merely the design specifications of one favored manufacturer—that the present confusion exists. If consulting engineers—possibly working through the American Institute of Consulting Engineers—would set up standard committees similar to those of organizations like the Instrument Society of America or the American Society of Mechanical Engineers, fair, reasonable and logical

(*Continued on page 11*)

CUTS GUARD RAIL COSTS
—speeds maintenance, too!



Ford Tractor with Danuser Driver and Breaker

Here's a faster, easier way to set posts for highway guard rails and park automobile barriers. Just back the Ford Tractor into position, touch the lever of the Danuser Driver and Breaker and a 200 pound weight drives a 6 inch post 2½ feet deep in 1 minute. Think what this can mean in time and labor savings!

Breaks concrete and rock quickly—easily!

With the Danuser Driver and Breaker you can make quick work of breaking concrete and rock. Special breaker head, sold separately, strikes 25 blows a minute to break up sidewalks and driveways in a hurry. Use it for tamping dirt, too.

The Danuser Driver and Breaker is one-man operated. A single operating lever provides control of drive weight through its complete operating cycle, thus permitting instant selection of impact force. On hillsides or uneven ground, you can adjust easily to plumb.

This new tool drives steel or wood posts up to 8 feet long. It attaches quickly to Ford's 3-point hitch and is powered by the Ford Tractor. Tripod-type legs hold it upright in storage.

The Danuser Driver and Breaker is just one of many money-saving tools designed for use with the low cost Ford Tractor. To find out about all of them, see your nearby Ford Tractor and Equipment Dealer or write to the address below.

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* Design Department, Willys Motors, Inc.

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Model	Cyl. and Head	Displ. Cu. in.	Range Max. bhp	Range of speed
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Hurricane	4 F	134.2	22 - 70	1200 - 4000
Lightning	6 L	161.0	28 - 75	1200 - 4000
Giant Hurricane	6 F	161.0	28 - 90	1200 - 4200

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functional specifications could be developed. We think these would save enormous amounts of time in consulting engineering offices and would put an end to the "turmoil of negotiations" to which Consoer and Smith allude.

We may be the only equipment manufacturer who does not view the Consoer-Smith suggestion with enthusiasm. However, it is also possible that there has been "practically no fault finding on the part of the manufacturers" because they consider it unwise to express criticism.

We manufacture chlorination equipment. Although Consoer and Smith indicate that it is their practice to list three manufacturers, on recent calls they only listed one manufacturer in our field. We are convinced that our equipment is superior to that of the listed manufacturer for the job in question. Further, the firm of Consoer, Townsend & Associates has repeatedly denied us an opportunity to demonstrate the alleged superiority of our equipment.

KERMIT FISCHER
President, Fisher & Porter Co.
Hatboro, Pa.

These like it fine

SIR: Orchids to you for publishing the fine article by A. W. Consoer in your July 22 issue. We believe the equipment clause outlined in the article should do a lot toward eliminating purchasing by contractors of inferior equipment because of price.

We should like to see other engineering firms adopt this equipment clause.

J. C. KRUM
Manufacturers' Representative
Kalamazoo, Mich.

SIR: The method of bidding by general contractors on major equipment items as set forth in this article has been used by a number of consulting engineers engaged in the design of water and sewage treatment projects and in each case the advantages of the method have been definitely shown in eliminating delays in the awarding of a contract, arguments in the accepting of equipment as an equal, and pressure on the owner to accept an untried item of equipment.

The method of bidding is equitable and fair, does not eliminate competition in any regard, and allows the owner to select equipment with regard to the price and relative merits of the equipment as bid upon by the contractor. It also protects the con-

(*Continued on page 12*)

machine-digging in

City Congestion Above and Below Ground

THE MINNEAPOLIS GAS COMPANY recently installed gas mains in such major downtown thoroughfares as Fifth St., Sixth St., Nicollet Ave., and Second Ave. S., in connection with one of the city's biggest repaving programs in years. Shown here are crews of Minnesota Williams Company putting in one of these lines under Fifth St. between Nicollet and Hennepin Aves.

The compactness of the CLEVELAND Trencher and its maximum operator visibility and control—inherent in all CLEVELANDS—made machine-digging practical on this job despite traffic problems and numerous underground obstructions. Advantages like these, enabling CLEVELAND owners to dig *more trench, in more places at less cost,* have earned outstanding preference for CLEVELANDS—among contractors, utilities and municipalities, alike.

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tractor by establishing a method of selection of equipment items.

Harry E. Schlenz
President
Pacific Flush Tank Co.
Chicago, Ill.

Sir: The concept of providing a uniform, clearly defined basis for receiving bids from contractors on construction and the furnishing of mechanical equipment set forth in the Consoer-Smith article on the new proposal form being used by their firm solves vexing problems of contractors and equipment manufacturers concerned with presentation of price on the specified standard of quality of construction and equipment.

For the equipment manufacturer whose pricing is based on quality of engineering, performance and service this form of proposal and basis of award and evaluation, protects him against those whose main consideration in selling is based on speculative pricing irrespective of the standards specified in the hopes of using only a low bid price as leverage to obtain award and approval.

Milton Spiegel
Vice-President
Chicago Pump Company
Chicago, Ill.

CALENDAR

American Society of Civil Engineers, hydraulics division, annual convention, Austin, Texas, Driskill Hotel, Sept. 8-10.

National Highway Conference of County Engineers and Officials, ARBA, Deshler-Hilton Hotel, Columbus, Ohio, Sept. 13-15.

Society of American Military Engineers and American Society of Civil Engineers, District 7, joint meeting, Hotel St. Paul, St. Paul, Minn., Sept. 13-14.

Illuminating Engineering Society, national technical conference, Chalfonte-Haddon Hall Hotel, Atlantic City, Sept. 13-17.

Western Association of State Highway Officials, Challenger Inn, Sun Valley, Idaho, Sept. 16-18.

Public Works Congress of the American Public Works Association, Claridge Hotel, Atlantic City, Sept. 19-22.

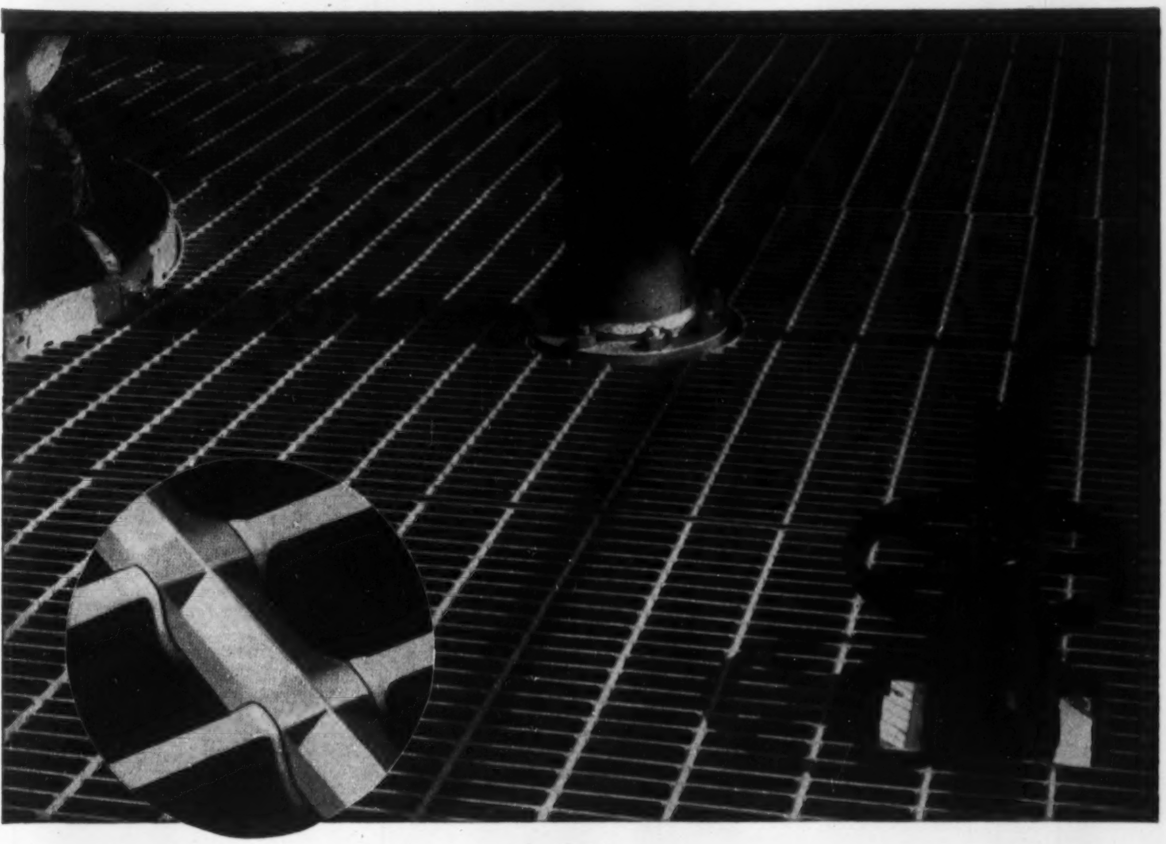
Society for Experimental Stress Analysis and International Congress and Exposition: Bellevue-Stratford Hotel, Philadelphia, Sept. 21-23.

Southeastern Association of State Highway Officials, annual meeting, Andrew Jackson Hotel, Nashville, Tenn., Sept. 28-30.

Federation of Sewage and Industrial Wastes Associations, Netherland Plaza Hotel, Cincinnati, Oct. 11-14.

National Conference on Industrial Hydraulics, annual meeting, Sheraton Hotel, Chicago, Oct. 14-15.

American Society of Civil Engineers, annual convention, Hotel Statler, New York City, Oct. 18-22.



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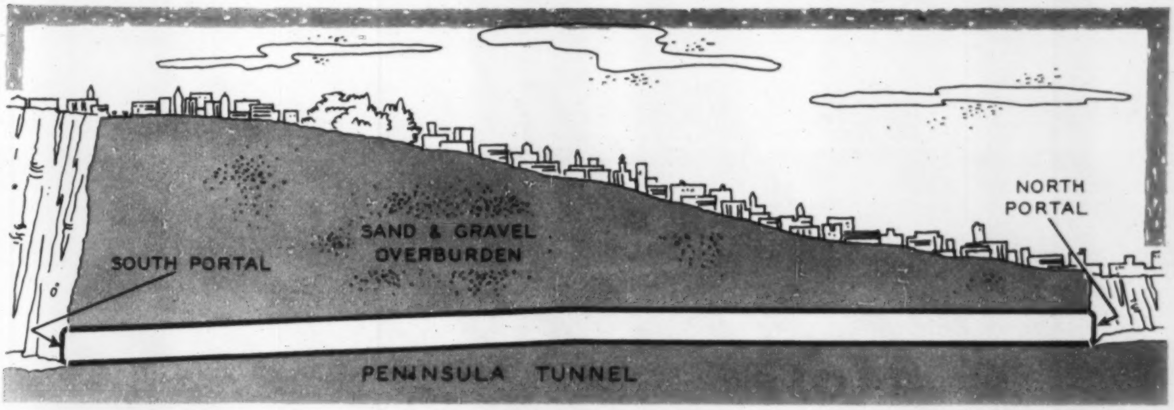


The Union Pacific Railroad's continuing modernization program called for maintenance and control of water leakage at its Peninsula Tunnel. Use of Prepakt methods and materials produced . . .

Top-Economy Tunnel Repair for UNION PACIFIC RAILROAD

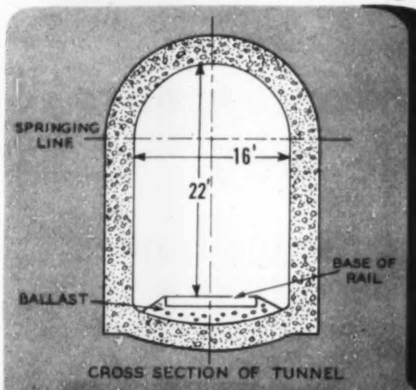
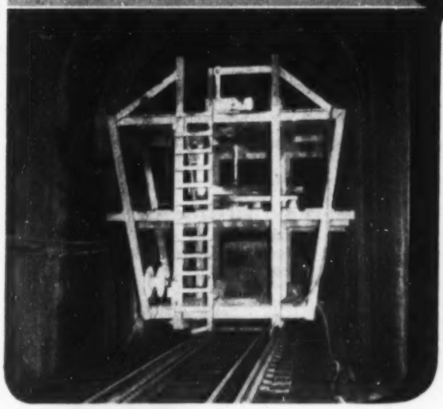


Diagram shows cross section of Union Pacific's Peninsula Tunnel which extends for 5,436 feet under Dana Street, Portland, Oregon.



Drill-and-grout repair work which stopped water leakage was done from work train of specially-built jumbos. One is shown here in tunnel during operations.

Halting water flow through the concrete lining of a mile-long, 40-year old railroad tunnel could have been prohibitively expensive—*but for Intrusion-Prepakt it was a routine maintenance project.*

As a result, the Peninsula Tunnel of the Union Pacific Railroad in Portland, Oregon was repaired by Intrusion-Prepakt with speed, thoroughness and economy unmatched by any other method.

To halt extensive water drippage in this tunnel, Intrusion-Prepakt employed its highly effective "drill-and-grout" technique. This consisted of drilling holes through the crown in a pre-determined pattern for later pumping of Intrusion Grout.

Initial grouting work stabilized the sand-and-gravel overburden. Then, working against this foundation, grout was forced into the porous concrete sealing it against water penetration. This required 210,000 cu. ft. of Intrusion Grout for the overburden and 41,000 cu. ft. for the lining.

With no interruption of tunnel traffic, Prepakt economically produced a dry tunnel meeting Union Pacific requirements.

Results like this show why many railroads rely on Intrusion-Prepakt for maintenance of their concrete structures.

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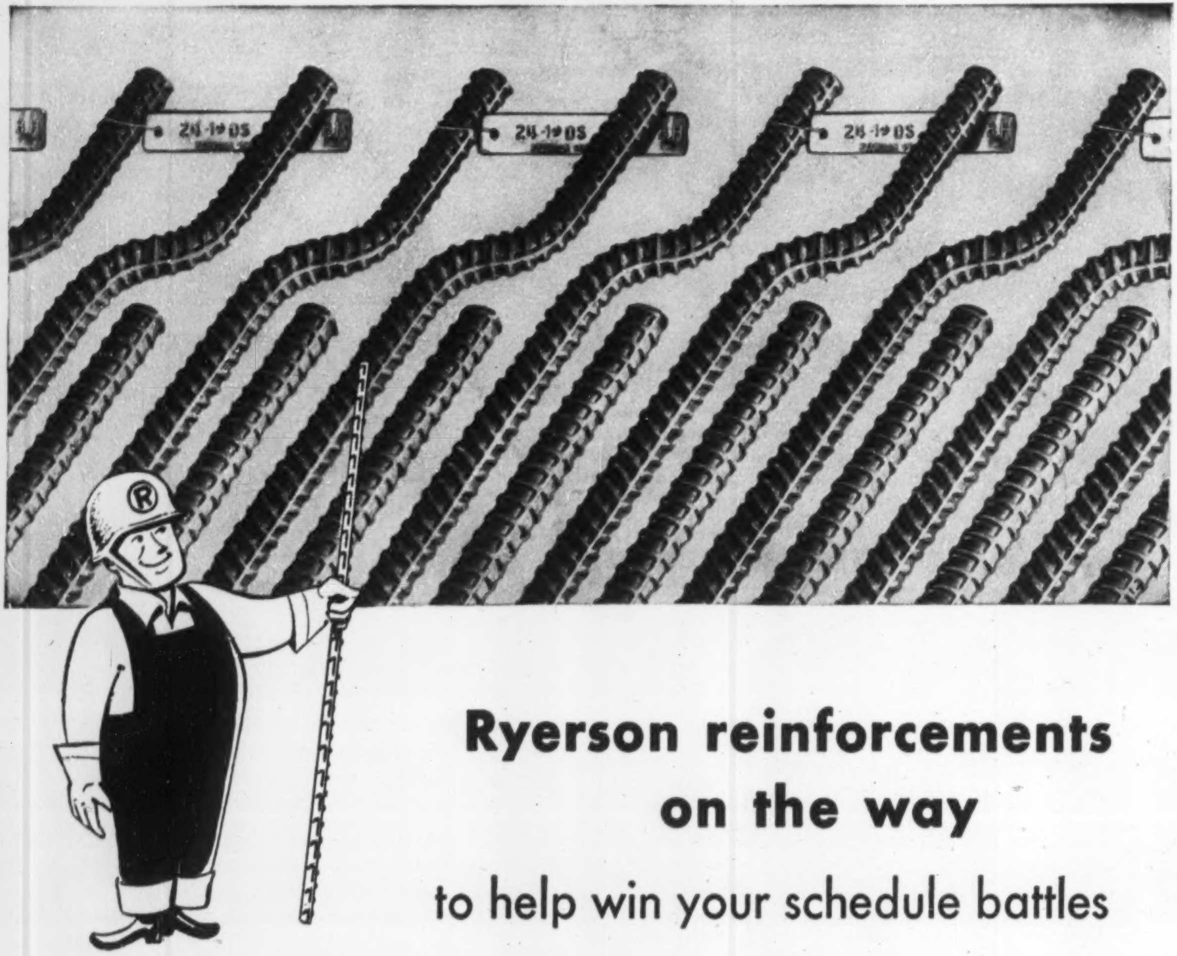

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THE CONSTRUCTION WEEK

WHO'S AN ENGINEER?—Tired of complaints about misuse of professional titles, Wisconsin's Board of Registration for Architects and Engineers published a list of approved uses in directories and telephone books:

Architects—Only those holding current registration tration in Wisconsin may use the title. Specialities should be listed after the title.

Engineers—Only those with current state registration. Specialties (such as chemical, civil, etc.) to follow the title.

"Hoisting engineers," "stationary engineers" and the like, said the board, may not list the word "engineer" first.

NO LABOR BAR?—California labor unions won one victory anyway, in their fight to bar "right-to-work" legislation from making headway.

Said Governor Goodwin Knight (now seeking a four-year term in his own right, after succeeding Earl Warren): He will veto any so-called "right-to-work" bills or bans on secondary boycotts.

DEER TOLL—New Jersey's brand-new Garden State Parkway—now almost completely opened—has an unusual problem: It may be forced to protect deer with extensive and expensive fencing.

The state's Division of Fish and Game, confirming that motorists have killed at least 10 deer so far, wants sections of the road right-of-way fenced in southern sectors of the state.

The parkway management commented hopefully that perhaps the deer would learn to avoid the road, wouldn't need fences.

WEATHER GOOD—THAT'S BAD—Pennsylvania's highway department had some complaint to make about the weather: It has been too good—too dry for too long.

Because of good weather, said Highways Secretary E. L. Schmidt, the department's contract work is running 120 to 145% ahead of schedule. And tax receipts are a bit lower than expected.

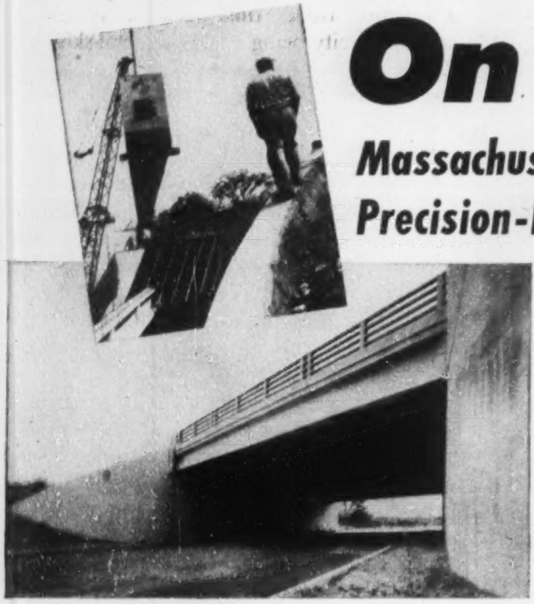
Result: The department is running out of money, has ordered curtailments in working time.

AERIAL ARCHITECTURE—The U. S. Air Force is putting its standard equipment to good use in its efforts to get going on construction of the Air Force Academy planned for Colorado Springs, Colo.

Helicopters took senior members of five architectural firms for a close look at the rolling hills and rugged rock formations of the area; Air Force jeeps gave them a rougher—but closer—look at the terrain.

On the Beam

Massachusetts Builds Handsome Bridges with Precision-Precast, Prestressed 'Incor' Concrete Beams—Spans up to 65 feet



Scotland Road Bridge: 24 beams of 65-ft. span, prestressed by Roebling method.

● In an area enshrined in yesterday's history, Massachusetts is today making construction history, with precast, prestressed bridges built with post-tensioned beams, spans up to 65 ft.

MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS has to date built seven prestressed bridges, using various methods of tensioning, as part of a far-seeing program. Four bridges, shown here, on Newbury-Newburyport Relocation of Route 1, have I-shape cross section, with depth-to-span ratios of 1:17 to 1:21. Beams are spaced 4½ ft. apart, decks cast in place. Overall lengths vary, but distance between diaphragms is constant.

Beams were fabricated by NEW ENGLAND CONCRETE PIPE CORPORATION under carefully controlled conditions, in an outdoor casting yard. Using 'Incor'* 24-Hour Cement, concrete was steam-cured, and even in cold weather, forms were stripped in less than 24 hours, and initial tension of 50 tons applied. The 4000 psi specified for full prestressing was attained in 24 to 27 hours.

Outstanding projects such as these re-emphasize the coming of age of prestressing, for important economies in concrete and reinforcing steel, as well as in erection. There is an inbuilt safety factor, too: During fabrication, members are subjected to greater loads than they take in the field. And concrete never has to be painted.

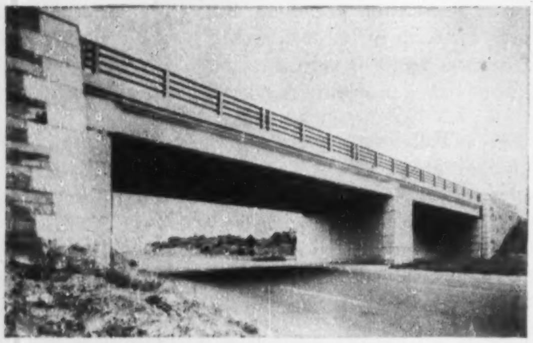
Designed for the material and method, not as a substitute for something else . . . with members cast to closest tolerances for fast erection . . . mass produced under controlled conditions—result, beautiful, enduring, economical structures to serve a highway-hungry nation.

*Reg. U. S. Pat. Off.

Design and Supervision
MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
JOHN A. VOLPE, Commissioner
JOHN RUNDLETT, Bridge Engineer **H. G. GRAY**, Chief Engineer

General Contractor: **A. V. TAURASI CO.**, Boston

Beams Fabricated by: **NEW ENGLAND CONCRETE PIPE CORPORATION**
Newton Upper Falls, Mass.



Hale Street Bridge: 18 beams of 64-ft. span, prestressed by Freyssinet method.

Storey Avenue Bridge: 36 beams of 58-ft. span, prestressed by Lee-McCall method.

Pine Hill Road Bridge: 20 beams of 59-ft. span, prestressed by Prestressed Concrete Corp. method.

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WASHINGTON OBSERVER

Masonry construction interests and building trades this week in Washington began an all-out battle to counteract publicity being given to metal-skin building construction. They maintain that the news stories of aluminum and steel curtain walls have widely exaggerated the cost savings involved in the speed with which the walls can be erected, and say they can beat the costs claimed by proponents of aluminum and steel.

•

Contract awards for Spanish base construction began this week with the opening of bids for a $5-million airport paving job at Torrejon, near Madrid. This first bid opening had been delayed about a month because the Spaniards lacked needed data on such things as wind direction, velocity, and the like—without which the work couldn't begin. From here on out, there will be a steady flow of contracts, next opening coming on Sept. 22.

•

Local interests may finance power part of the $216-million Trinity River project in northern California. Pacific Gas and Electric has proposed—and Bureau of Reclamation has approved—a restudy of the whole project to see whether either a private company or local public agency can take on the power facilities of the multi-purpose project. If this is approved, officials estimate that the estimated $216-million cost to the taxpayer would be reduced by about $60 million. This would help in getting the Trinity project authorized by Congress. This last session several such federal-local partnership arrangements were given the green light.

•

Spectre of a power shortage in the Pacific Northwest by 1961-62 has been raised again by the Bonneville Power Administration. The agency, in a report issued last week, says that under minimum water supply conditions, the area might possibly squeak through—but what's needed is a steady hydro-power building program to give the area a margin of safety. The agency notes, however, that some 33 non-federal projects with a potential capacity of about 5,400,000 kilowatts are under consideration in the area.

•

AFL Building Trades Dept. predicts construction employment will be down 500,000 in the last half of 1954. This is in conflict with general trend of most government statistics, but worth noting anyway, because building trades boss Richard Gray will be doing some pushing for more public works. He's an Eisenhower supporter, and will be listened to.

•

An added push for faster construction of the Pan-American Highway has been given by Sen. George W. Malone, chairman of a congressional committee that is about to take off for South America. Malone, who is a mining expert, also wants feeder roads built to connect the Pan-American Highway with mineral developments throughout Latin America. This is designed to insure mineral supplies in the event we are cut off from other sources in another war.

•

New TVA chairman Vogel has broken the ice on the politically hot AEC-TVA private expansion deadlock. The controversial Dixon-Yates power contract probably will be signed soon. Only details need be worked out now between the Atomic Energy Commission and TVA. Two Democratic holdovers on the TVA board had held back on the deal, complaining they were not supplied complete information, but all contract details have been turned over to them, and TVA staffers are studying them. A design contract now can be expected this fall.

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ASCE disciplines bidders

One member expelled and 13 others suspended as aftermath of bidding for engineering work on South Carolina bridge

Drastic disciplinary action has been taken against 14 members of the American Society of Civil Engineers who had an active part in competitive bidding for the engineering work on a movable bridge in South Carolina.

One member was expelled, one was suspended for five years, and 12 others were suspended for one year by action of the ASCE Board of Direction.

Names of the disciplined members have not been made public by the board. That information will be transmitted by letter to individual members of the society in the near future.

However, it is known that charges of violation of the ASCE code of ethics were brought against C. R. McMillan, chief highway commissioner of South Carolina, who issued the first call for bids last October, and against those society members whose names form a part of the official designation of the firms that bid as well as those members who represented their firms in the bidding.

And as McMillan issued a second call for competitive bids this year, (as he maintains he is required to do by law), after the ASCE board had formally protested the initial call, it is assumed that he is the member expelled.

Further, as only one firm with a partner who is a member of ASCE responded to both calls, it appears probable that the ASCE member who represented that firm in the bidding is the one suspended for five years. Also, with one or two exceptions, the names of those suspended for one year can probably be deduced by comparing the list of bidders with the ASCE membership roster.

• **Many firms bid**—Fifteen consulting engineering firms or their representatives responded to the first call for bids:

Reynolds, Smith & Hills, Jacksonville, Fla.; Riley & Ross, Engrs., Miami, Fla.; Suhr, Berryman, Peterson & Suhr, Inc., Chicago; L. O. Hopkins, Nashville, Tenn.; Page Associates, Chicago; V. Barstow, New York; Szilard & Associates, New York; Varo Engineers, Columbus, Ohio; The McPherson Co., Greenville, S. C.; Patchen & Zimmerman, Engrs., Augusta, Ga.; E. Lionel Pavlo, New York; John C. Harte Co., Atlanta, Ga.; Parsons, Brinckerhoff, Hall & MacDonald, New York; Trygve Hoff & Associates, Cleveland; Samuel J. Caulfield, Arlington, Va.

The fact that so many firms did bid was first brought to public attention as a result of a letter from a member of ASCE to the editors of this journal drawing attention to the call as published in the advertising pages of ENR and stating that such bidding is generally considered to be a violation of the ASCE Code of Ethics (ENR Nov. 19, 1953, p. 167).

In May, following the second call for bids for the engineering work on additional bridges, the ASCE board sent a formal protest to the Governor of South Carolina, asking the call be cancelled. It was not, and bids were received from eight firms or individuals. They are:

V. Barstow, New York; Dotterer Engineering Co., Charleston, S. C.; Riley & Ross, Miami, Fla.; Varo engineers, Columbus, Ohio; Reliance Contracting Co., Pittsburgh, Pa.; Samuel J. Caulfield, Arlington, Va.; Baker-Wibberley, Hagerstown, Md.; and Patchen & Zimmerman, Augusta, Ga.

• **Others may be disciplined**—At the special meeting of Aug. 20 at which the ASCE board heard the accused members in person or considered their written defense, question was raised as to whether other partners of firms who bid may not be just as responsible for the alleged violation of the ASCE code as were the members against whom the board has already taken action. That possibility is now under study by the ASCE's Committee on Professional Conduct and may result in further charges of violation of the code.

• **Major question**—The question of professional ethics involved in the charges against society member has been the center of heated discussion within the ranks of civil engineers very particularly since South Carolina's call for bids more than a year ago.

The heart of the argument is a section of ASCE's Code of Ethics that labels it "unprofessional and inconsistent with honorable and dignified bearing for a member of the American Society of Civil Engineers to participate in competitive bidding on a price basis to secure a professional engagement."

Arguments against this provision of the code have centered around the proposition that bidding is, in fact, a legal requirement for some units of government; that, with proper safeguards, public competitive bidding could result in engineering work on a par with that obtained by private negotiations.

Supporters of the code provision center their arguments largely around the fear the bidding would not result in best service for the client; that it is undignified and endangers the standing of engineers as professionals.

Attack on windfalls

FHA, in role of preferred stockholder, takes action against housing promoters

Housing chief Albert Cole has started a legal fight to recover windfall profits on FHA rental projects. Aimed first at Section 608 projects that have been under investigation, the action is broad enough to apply as well to other FHA rental housing, including defense and Wherry Act projects.

The direct drive to recapture windfall profits came as a surprise. Sponsors of FHA rental projects have been on tenterhooks since federal authorities fired the opening gun of the new campaign Aug. 28.

FHA Commissioner Norman Mason on that date sent off letters to Sidney Sarner, president of a group of corporations that had built a Section 608 project in Fort Lee, N. J. Reported windfalls for that project total more than $2.4 million. FHA charges that more than $1.3 million of this was paid to one of the two principal sponsors of the project to repurchase his capital stock, which cost him $6,500.

• **Using charters as weapon**—Federal authorities base their case for recovery of windfalls mainly on the charters of FHA rental corporations. William F. McKenna, Cole's deputy in charge of housing investigations, and McKenna's staff came up with the idea of using the charter weapons.

Charters of basically similar form

. . . Windfalls

are prescribed by FHA for rental housing corporations financed with agency-insured mortgages. The charter stipulates that FHA owns the preferred stock in each corporation. Further, it gives the preferred stockholder the right to vote out a board of directors and elect new directors whenever the corporation defaults under the rules set out in the charter and in governing agency regulations.

Government housing officials maintain that promoters of Section 608 projects who paid windfalls to themselves violated their corporation charters. The charters, they say, specify that only earned income may be paid to stockholders. A legal battle looms over the question of what is meant by earned income.

• **Four other violations listed**—Other defaults were charged, however, in the notices to Sarner and his Linwood Park, Inc., which comprises 13 corporations for separate sections of the same project. FHA charges the corporation with four violations:

- Making loans to business and recreation centers (principally out of windfalls), thereby violating the provision of the charter that limits corporations to the construction and operation of rental housing projects.
- Redeeming a portion of the common stock without required prior approval of FHA.
- Failing to furnish data to FHA when requested, thus violating both the charter and the regulations.
- Compelling tenants to pay what amounted to higher rents by charging them for television antennas and garages even when tenants had no use for these facilities.

• **Court fight looms**—Sarner last week told ENR he will resist the action. He said the charges are not grounded in law. A court fight, initiated either by Sarner or by the federal government, seems certain to be next.

The letters to Sarner gave him 72 hours to call a meeting of the corporation within ten days. Upon his refusing to act FHA claims the right to call the meeting and—as preferred stockholder—remove the present directors and put FHA men in their place.

The new FHA directors then would bring a corporation suit against stockholders who have received windfall profits to compel the return of the disbursed windfall money. If successful in recapturing the windfalls, the directors then presumably could use the money to reduce the mortgage debt against the project and make downward adjustments in the rents.

A long legal struggle impends before the rights of the federal government vs. project owners can be established. But federal housing officials are not waiting for the outcome of a legal test. They are going ahead processing other windfall cases.

Data on all windfall projects are turned over to the Justice Department for use in such court actions as may be decided upon. The Justice Department will prosecute the cases.

As it looks now, some 400 corporations that built Section 608 projects are in the windfall profits category. For the first 200 corporations in this class, windfalls totaled more than $39 million out of FHA-insured mortgage loans that add up to nearly $273-million. If the list increases to 400, as expected, the money involved may nearly double.

Design work is authorized on Oakland-Alameda tube

The California Highway Commission last week approved an appropriation of $500,000 for preliminary work on a new $15-million estuary tube linking Oakland with Alameda. Highway engineer George T. McCoy has been authorized to proceed with designs and right-of-way acquisition.

The two-lane estuary crossing will parallel the existing Posey tube, and will be an important connection of the Eastshore Freeway. In approving the appropriation, the commission said traffic volume carried by the present tube far exceeds capacity, causing delay and accidents.

Previously the parallel tube had been considered part of the approach system for a second crossing of San Francisco Bay, to be financed as part of that project. But the commission pointed out that the tube cannot be financed and constructed from bridge bonds by the time the Eastshore Freeway is completed.

St. Lawrence contract

The Hydro-Electric Power Commission of Ontario has announced the award of the first Canadian contract for construction on the St. Lawrence power project to Mannix-Raymond Co., Ltd., of Montreal. The award is subject to the approval of the New York State Power Authority, U. S. partner in the power project.

HEPC announced that Mannix-Raymond was the lowest of 14 bidders for the construction of two cofferdams at the site of Barnhart Island power plant with a bid of $2.4 million (ENR Sept. 2, p. 24). Start of construction was expected within 10 days.

Seaway assignments

Army Engineers organize for job of supervising design and construction

The Army Engineers last week began organizing a team to supervise design and construction of the U. S. side of the St. Lawrence Seaway project.

Col. W. P. Trower, engineer in charge of the North Central Division Headquarters in Chicago, was named to head the Army Engineer setup. Immediate supervision of the design and construction activity was assigned to Col. Loren W. Olmstead, engineer in charge of the Buffalo district.

Following official designation of the Corps of Engineers as the official U. S. construction agency for the joint U. S.-Canadian undertaking, it was announced that the job of designing lock gates, valves and operating machinery for the two or possibly three high-lift locks on the U. S. side had been farmed out to the Nashville District.

Participation of Nashville District engineers will enable the U. S. organization to capitalize on wide experience in the design of high-lift locks such as those for the Seaway project.

Design and construction of the Wilson lock on the Tennessee River at Florence, Ala., the first high-lift lock built in this country, was done by the Florence District engineers in 1926. That district later was consolidated with the Nashville District.

According to Col. Gilbert M. Dorland, Nashville District engineer, all other high-lift locks on the Tennessee River, with the exception of the Kentucky lock, were designed for TVA by the Nashville District. It also designed high-lift locks for the Monongahela River in Pennsylvania.

J. A. Hageman, district geologist, is now working out of the Buffalo District on preliminary sub-surface investigations of project sites. Other personnel will be sent to Buffalo at a later date.

Florida board approves plan to employ private engineers

The Florida State Road Board has approved a plan to employ private engineering firms on a temporary basis to aid the department's own engineers in carrying out its road and bridge construction program.

The board said it was not possible for the department to handle all of the work by itself without delaying the program.

Public objections hobble construction of guided missile bases for air defense

Programmed construction of Nike guided missile air defense installations is falling behind schedule because of public reluctance to see these push-button warfare devices installed in the backyards of the nation.

The big snag in this vital defense construction is land acquisition. Objections have come in every form, from official complaint by civic officials to senseless criticism from cranks. Real estate groups, farmers and homeowners all have contributed to this slow-down in the national air defense effort.

Nike installations are planned to guard about 35 critical defense areas of the nation, mostly major cities. There will be several separate Nike installations in each of these critical areas. Total construction cost of all these installations is expected to amount to $80 million to $90 million (ENR May 6, p. 24).

In large part the delay has been due to public misunderstanding of how Nike anti-aircraft installations operate, and, in particular, how such an installation fits into the local community situation.

But there also has been some irritation in a few cities across the nation at the so-called "high-handed attitude" of those charged with land acquisition and engineering details of the construction program.

In the early phases, an unworkable security dictate from Washington forbade surveyors and engineers from disclosing why they wished to examine a land owner's property. As a result, these military men were actually denied access to some property. Later, Army officials permitted a "minimum of intelligence" to be given the land owner concerned.

In Los Angeles, local Army personnel selected a site near the Municipal Airport for one of the Los Angeles area Nike installations. The city objected that location of the installation at that particular site would create a real hazard in the approach of air traffic.

The city offered alternate sites, but local Army officials remained adamant. The mayor took the case to Washington with the result that top military officials were sent out to arbitrate. They decided the city was right; the installation was relocated.

Another objection is fear of falling debris from an exploded missile. Army officers, of course, point out that in a wartime emergency most cities would rather chance falling missile debris than face the prospect of A-bomb destruction.

The Army also points to the fact that the Nike installations do not engage in any "practice." The installation remains silent and unnoticed unless an actual enemy bomber gets through all other air defenses. The Nike is the last-ditch weapon in the air defense system.

But to minimize the danger of falling debris, the Army currently is testing self-disposing missile boosters produced by the Glenn L. Martin Company in Baltimore, Md.

Another important factor in opposition by citizen groups in various localities is the fear of what such an installation might do to real estate values in the area. The Army has no positive answer to this except to say that military installations in the past have seldom decreased real estate values. In fact, they have actually increased real estate values in most cases.

Potential damage to crops simply does not exist. There is no harmful by-product in the weapon installation or in its operation. When a particular farmer's land is determined to be the best site for the installation, he is paid an adequate price for his land.

Individual installations, the Army points out, are extremely small in area—never more than 40 acres, and seldom that large. The installations are designed to fit into the particular community or rural area so as to be as inconspicuous as possible.

Engineer firm begins study on high-speed transit system

The Delaware River Port Authority has engaged the engineering firm of Parsons, Brinkerhoff, Hall and Macdonald of New York to conduct a survey to determine the feasibility of establishing a high-speed transit system to feed South Jersey traffic into Philadelphia.

The area to be covered by the survey lies within a 35-mi radius of Camden. Edward C. McAuliffe, chairman of the Authority, said that every phase of the operation of common carriers and private vehicles within the area will be studied. He has described the survey as unparalled in scope.

It is estimated that the cost of the survey may run as high as $325,000. The studies are to be completed within 14 months. A mass transportation system for the area, if found economically desirable and financially feasible, would be a multi-million-dollar project.

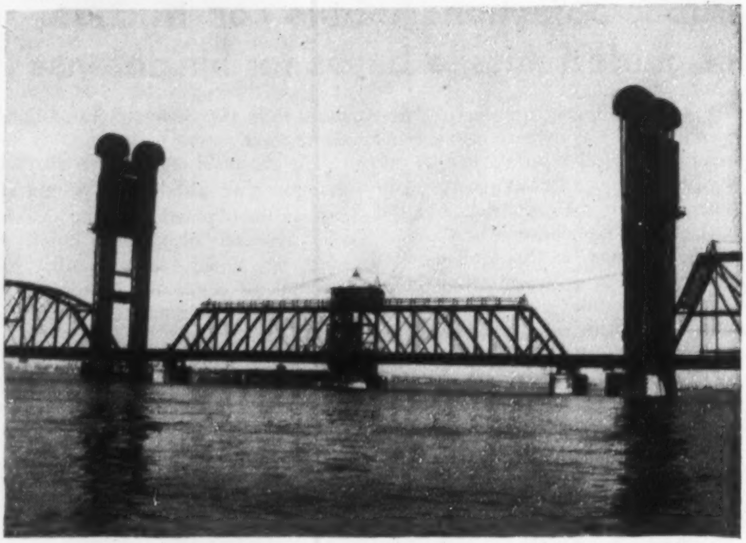
Wide World photo

New Interior Undersecretary takes oath

Clarence A. Davis, of Lincoln, Neb., (second from left) is sworn in as Undersecretary of Interior by Chief Judge Harold N. Stephens of the District Circuit Court of Appeals (left). Mrs. Davis holds the Bible, and Interior Secretary Douglas C. McKay (right) looks on. Davis will play an important role in the development and administration of federal water and power policies.

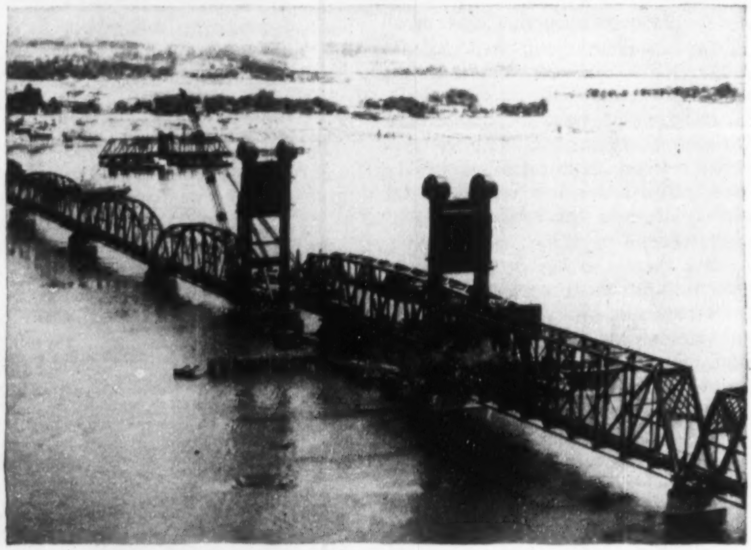
Old span out . . .

Switching center spans on the Northern Pacific Railway bridge over the Columbia River at Pasco, Wash., was a tightly timed job, carried out with minimum interruption of rail service. It was part of a $4.5-million bridge rebuilding that included putting in new piers and abutments and raising the entire bridge 4 ft—necessary because recently completed McNary Dam has raised the river's water level. The old 237-ft center swing span (left) rests on its old piers with temporary girders closing the gap to the new piers. Hoist towers on the new piers house the electric motors, sheaves and counterweights for lifting the new span.



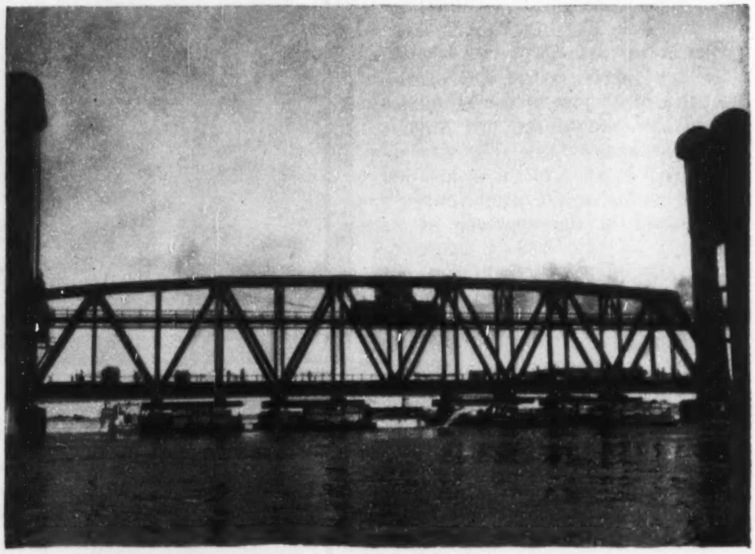
. . . new span in

The new 307-ft vertical lift span was preassembled on falsework near the river bank. After assembly, four barges partially filled with water were slid in under the span. Then, water was pumped out of the barges to lift the span so it could be floated into position in the bridge. With only inches of clearance, the span had to be moved in one end at a time. The job superintendent and engineer directed operations from the span itself, coordinating movements with portable radios. After its removal the old span was tied up at shore (left background). Actual exchange of the spans took 6 hrs.



. . . in 12 hr, 5 min

Another 6 hr were needed to secure the span in place, complete electrical connections and set up rail joints. The river was closed to navigation during the entire operation, and a Coast Guard patrol boat stood by for rescue work. The bridge, built in 1888, was the first railroad bridge across the Columbia River. Since the rebuilding job got under way, 10 new concrete piers have been built, and six 250-ft spans have been moved 40 ft longitudinally and raised to proper height. The new center span gives a 70-ft clearance over the river when raised. Contractors for the job are Kansas City Bridge Co. and Massman Construction Co.



Bidding dilemma

Indiana turnpike bidders submit figures on basis of two completion dates

The Indiana Toll Road Commission, after opening bids last week for the first 7.4 mi of the 156-mi, $280-million east-west Indiana turnpike, was faced with making this decision:

Should it pay a premium for an eight months' earlier completion date in the hope that toll receipts in the first eight months would offset the added costs?

The commission had requested bidders to submit two sets of figures. One set was to be based on completion of the 7.4 mi of four-lane divided highway, located a short distance northwest of South Bend, by June 30, 1956. And, to this total figure, each contractor was asked to add a lump sum for completing the work by Oct. 30, 1955.

Result of the commission's unique biding procedure was that the Sept. 1 opening for the first turnpike contract yielded two possible winners.

• Low bid, October '55—When all 20 sealed bids had been opened and their unchecked totals read, S. J. Groves & Sons, Co. of Springfield, Ill. was low bider at $3,488,014 on the basis of the earlier completion date of Oct. 30, 1955. In fact, this firm bid the same amount for both completion dates—a type of proposal not matched by its rivals.

Other bidders submitted additional lump sum bids for finishing the job in October '55 instead of June '56 in amounts ranging from $50,000 to $650,000. This was an average of about $285,000 or roughly $1,200 per day for the eight-month period.

• Low bid, June '56—Based on the later completion date of June 30, 1956, Reith-Riley Construction Co., Goshen, Ind., was low with a bid of $3,365,878. This was $122,136 less than the Groves offer, or roughly $500 per day for the eight months.

Contract award was deferred to give the commission some time to decide on whether it wanted to gamble on the earlier completion date. However, announcement of the low bidder was promised within a few days. Ground breaking ceremonies are scheduled for Sept. 21.

• Tight letting schedule—The commission has set up a schedule for receiving bids which is expected to place all construction under contract by the end of this year, except for a 20-mi section through the industrial areas of Gary and Hammond. It is planned to take bids each Wednesday for the rest of the year, except on Nov. 3 and 24 and Dec. 15 and 29.

In general, the commission does not intend to release the amount of its engineering estimates for comparison with the low bids.

• Controversial points—Except on two counts, bidders seemed pretty well satisfied with the commission's contractual procedures.

One point of criticism is aimed at the commission's stand that prequalification of bidders is unnecessary. In lieu of prequalification, each bidder is required to submit a certified financial statement before or at the time he submits his bid. Also, he must file an experience questionnaire including a description of his equipment.

The commission frowns on prequalification on the grounds that it might disqualify a contractor before he offers a bid. It believes in letting the contractor bid and then determining whether or not he is entitled to the contract.

A second practice to which many contractors are taking exception is the apparently unlimited amount of work that can be sub-contracted. But, the commission believes it can exercise adequate control for two reasons: (1) The general contractor must get the commission's approval for the amount of work he sub-contracts; (2) Subcontractors must file a financial and experience record with the commission.

Turnpike link reaches Philadelphia city limits

A $19-million, 12-mile stretch of the Schuylkill Expressway, which will link the center of Philadelphia with the Pennsylvania Turnpike, is now carrying traffic. Completion of a second section of seven miles brings the expressway from the turnpike's Valley Forge interchange to the city line.

Difficult rock excavation was required over a good part of the 12-mile stretch. At some points, it was necessary to blast through rock towering 170 ft. Along the 12-mile stretch 2,500,000 cu yd of rock was removed.

The expressway has four 12-ft-wide lanes and has an over-all width of 80 ft at some points.

Conduit and Foundation Corp. held the $12-million contract for the seven-mile stretch just completed. Joseph Sloan, was the firm's general construction superintendent. Representing the Pennsylvania State Highway Department were Edwin J. Kinney, district engineer, and Ellwood R. Hummel, construction engineer.

Toll highways

States push preliminary planning in order to get construction under way

Toll highway projects are moving ahead in several states.

The Massachusetts Turnpike Authority announced it will invite bids this month for bridge construction on the proposed 123-mi, east-west toll road across the state.

Ten engineering firms already are at work on design of the $239-million project. Howard, Needles, Tammen and Bergendoff, Boston, are designing bridges over the Westfield and Connecticut Rivers. Other engineering firms engaged are: Thomas Worcester, Inc., Charles A. McGuire & Associates, Charles T. Main, Inc., Fay, Spofford & Thorndike, Hayden, Harding & Buchanan, and Clarkson Engineering Co., all of Boston; Deleuw, Cather & Brill, of Brookline, Mass.; and Brown & Blauvelt and Knappen-Tibbetts-Abbett-McCarthy, of New York.

The New Jersey Highway Authority announced that an unbroken 144-mi stretch of the Garden State Parkway will be open by the end of this month. That will leave only the 21 mi from Irvington to Paramus to be completed according to schedule in mid-1955. At present 126 mi of the Parkway are in operation.

The Illinois State Toll Roads Commission has detailed locations of five projected toll highways to cover a 465 mi and cost $583 million.

Separate engineering surveys on the financial feasibility of each of the five roads are expected during November. If the surveys are favorable, the commission plans to offer its first bonds for sale by Jan. 1 and expects that construction will get under way next summer.

The Connecticut State Highway Commission has set a target date of Apr. 30 for completion of design work on the 129-mi toll highway across the state in order to clear the way for a start on construction early next summer.

State Highway Commissioner G. Albert Hill estimated that the entire $400-million project could be completed in four years if design work is finished by that deadline. State Highway Department engineers and 24 outside engineering firms now are at work on design of the toll highway.

The Carolina-Virginia Turnpike Authority has applied for a certificate of convenience and necessity allowing it to acquire right-of-way for construction of the oceanside toll highway to link Virginia Beach, Va., with Hags Head, N. C.

Lift slab safety

Precautionary measures imposed on contractors as result of accident

Special safety measures in lift slab operations have been ordered by California's Division of Industrial Safety as a result of an accident in San Mateo July 15 when a 250-ton concrete slab fell some 16 ft, injuring eight men who were standing on the slab (ENR July 29, p 25).

Unless contractors submit a method equally acceptable to the division from the standpoint of safety, the division said the following regulations must be complied with:

Cribbing made of 5-ft timber 4x8 in. must be provided, built up at all times to not more than 1 ft from the under side of the slab while the slab is being raised and up to the slab itself when it is in a stationary position.

Cribbing must be placed at intervals of not more than 18 ft around the perimeter of the slab until the slab is raised 6 ft. Then interior cribbing must be placed adjacent to each pipe support and brought to within 1 ft of the slab. The cribbing must miss the location of permanent walls and must be left in place until the permanent walls are constructed.

When slabs are raised to their permanent locations they must be secured against swaying by two 1-in. cables placed at each corner on the prolongation of each side of the slab and securely fastened with turnbuckles to adequate "dead men."

Contractors are to give the division of industrial safety at least three days notice of the location and date of proposed lift slab operations.

Philadelphia Electric orders record steam-electric unit

A record size steam turbine-generator—largest single-shaft machine ever ordered—will go into a $45-million power station to be built by Philadelphia Electric Co. somewhere in the Philadelphia area. It will be a 275,000-kw unit (rated name-plate capacity) built by Westinghouse Electric Corp. with a steam generator by Combustion Engineering, Inc.

This super-pressure unit will operate on steam at 5,000 psi and 1,200 F, the highest temperature and pressure yet projected. For comparison, the largest steam-electric units previously ordered are to go into the Gallatin plant of the Tennessee Valley Authority (ENR Feb. 25, p. 32). These are two 225,000-kw units to be operated at 2,000 psi and 1,050 F.

Joint bid is apparent low for Gavins Point Dam job

A joint bid of $4,010,804 by Donovan Construction Company and Foley Brothers, Inc., both of St. Paul, Minn., was apparent low on a job to erect the power house superstructure at Gavins Point Dam.

Six firms submitted bids for the job, the last major contract to be awarded for the dam, an Army Engineer structure across the Missouri River near Yankton, S. D.

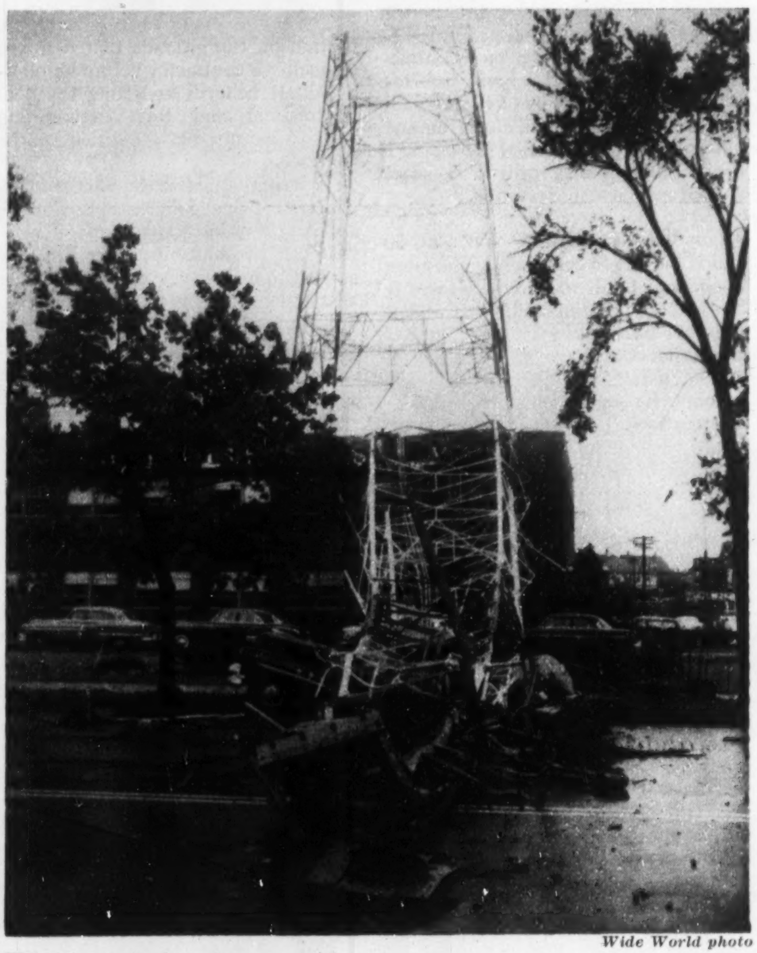
The contract includes erection of the power house proper, installing the turbines and all electrical equipment, and erecting the switchyard and transformer yard which will be located at the project.

The power house, to be of reinforced concrete, will be 340 ft long, 110 ft wide and will reach upward 65 ft from the generator floor.

The building will house the three 35,100-kilovolt generators that, because of Gavins Point's function as a re-regulating dam for Fort Randall Dam upstream, will produce a higher proportion of firm power than any of the other five dams on the Missouri River.

Contract specifications call for the No. 1 generator to be ready for testing in May 1956. The other two units will come on the line at about 60-day intervals with an Aug. 31, 1956, deadline.

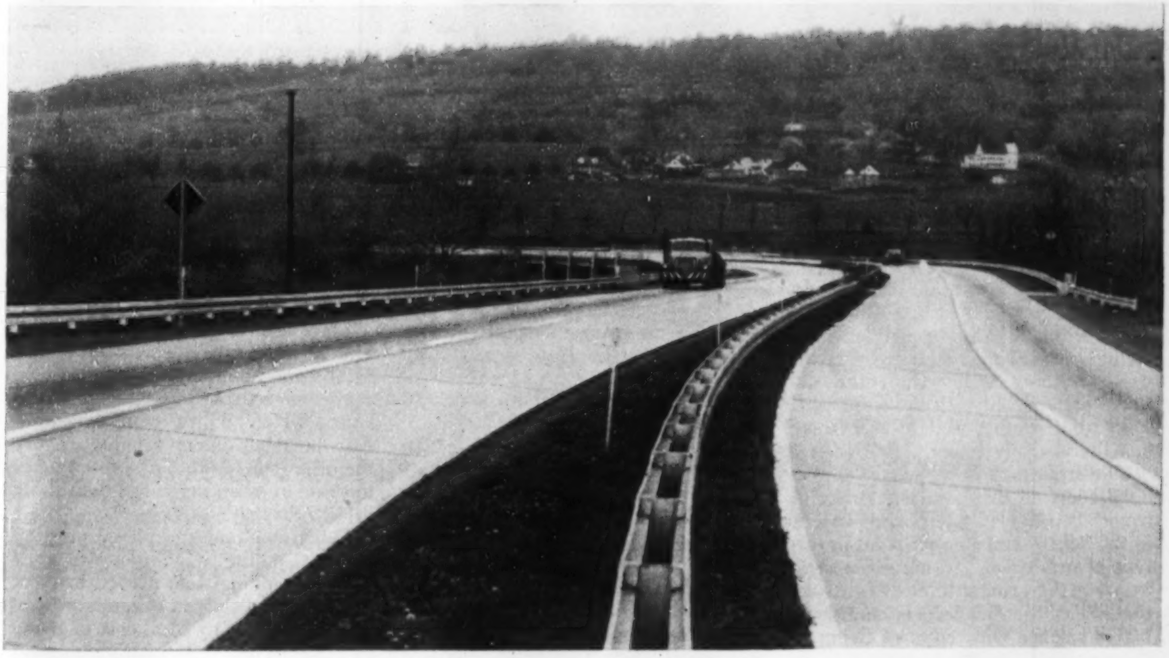
Diversion at Gavins Point, fastest growing of the Army Engineers' main stem dams, is scheduled to take place July 1955.



Wide World photo

TV tower is hurricane victim

Toppled by high winds, WBZ-TV tower in Boston was one of several felled by the hurricane that struck the notheast Atlantic Seaboard last week. This free-standing tower, with a total height of 649 ft, including an 87-ft antenna, is reported to have been the tallest structure in New England. It had been designed, in accordance with Radio and Television Manufacurers Assn. Standard TR116, for a wind pressure of 30 psf on 1.75 times the normal projected area. Wind velocities averaging 86 mph with gusts up to 100 mph were reported at Boston Airport.



Safety-Beam Guard Rail

on Pennsylvania Turnpike near Reading

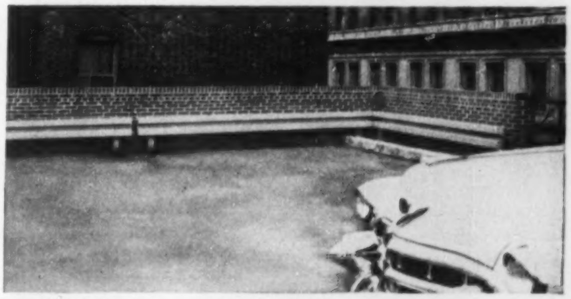
The above picture, taken along the Pennsylvania Turnpike, shows four strips of Bethlehem Safety-Beam Guard Rail. At the left, Safety Beam is protecting vehicles from a steep drop. In the center, a double line of Guard Rail forms a continuous impact-absorbing medial-strip divider. At the right, motorists are protected by Safety Beam installed on a dangerous curve.

Bethlehem Safety-Beam Guard Rail is made of sturdy sections of steel plate, bolted together on steel, wood or concrete posts. It bolts flush end-to-end, making one continuous beam, a factor which greatly simplifies installation on sharp curves.

What's more, Safety-Beam is easy to install, even by unskilled labor. No end anchor rods, special tools or complicated adjustments are required.

For more information about this and other steel products for highways, call the Bethlehem Sales Office nearest to you, or write direct to us at Bethlehem, Pa.

Besides protecting motorists at highway danger spots, Safety-Beam Guard Rail is used effectively in other protection-giving applications.



Parking garage roof in Atlanta, Ga.

Protected walkways for passengers at Shreveport, La., Airport.

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Georgia builders hold against fringes

Long strike ends with minor raises, no break in "no welfare" front—State threatens strike insurance—Emphasis placed on national pay averages contained in BLS studies

An eight-week strike of building trades unions that tied up virtually all construction in Atlanta and northern Georgia had ended this week—with wage increases well within the national pattern, but with the employers' solid front against welfare and fringe benefits virtually intact.

The strike had been justified by labor leaders on two points: A drive for fringe benefits—virtually non-existent in the South—and a newer point in this type of negotiation, which was a drive to bring the general level of construction wages to what leaders consider a better balance with costs of living in the area.

But the results were these: Of seven major unions, with some 3,500 men, involved in the strike, only one got anything at all in the way of fringes; and all settled for wage raises of between five and 10 cents an hour (all had demanded raises averaging 25 cents an hour, plus welfare).

• **Key point**—Key point in the strike was the drive for welfare benefits, which are far less prevalent in the South than in other sections of the country (ENR July 22, p. 27).

The walkout of the construction workers began July 1, when many of the union contracts expired and after talks with contractors—represented by the Georgia Branch of the Associated General Contractors—broke down. The contractors had offered new contracts on exactly the same terms as the ones that expired: no raises, no welfare, but no reduction in pay.

Both sides resorted to newspaper and radio publicity: Contractors contending that high labor costs were already forcing them to lose jobs to outside-the-state organizations; labor arguing that contractors were getting too high a profit margin, thus pricing themselves out of the local market.

• **Pressure brings end**—But the pattern for the eventual settlement appeared late in July, when the asbestos workers settled for a 5-cent wage increase, and did succeed in getting 7½ cents for welfare.

Finally, heavy pressure from the more than 8,000 other union men who were idled by the strike, plus pressure from subcontractors—and some unexpected pressure from the Georgia State government—brought an end to the battle. Here were the results.

- Ironworkers, settled for a flat 10 cents an hour increase.
- Operating engineers, accepted 10 cents an hour.
- Cement masons and plasterers, accepted 10 cents an hour.
- Laborers, settled for 5 cents an hour.

Plumbers, who were also on strike, did not deal with the AGC members but with subcontractors. Their dispute was ended when both sides agreed to submit it to the state industrial labor relations board.

• **State threat**—One unusual factor in the strike's end was the threat of state action against contractors—prompted by the halting of some $10 million of state construction work.

State Auditor M. E. Thrasher—after failing in two appeals to unions and contractors—warned that the state was "considering" a form of strike insurance whereby a contractor would be required to certify that wage and other agreements were in force for the duration of any state contract. If the contractor could not certify these conditions, Thrasher indicated, he might not be considered a qualified bidder.

Whether the state could enforce such a provision without special legislation was considered doubtful by many legal experts—but contractors nevertheless heaved a collective sigh of relief when the men went back to their jobs.

• **National pay eyed**—Perhaps the most significant development, from the viewpoint of management, was the evidence of careful study by union leaders of Bureau of Labor Statistics studies of nationwide hourly wages paid in construction.

Local leaders pointed out that BLS says a steel worker's average pay is $2.96 an hour—something like 21 cents more than the top pay in Atlanta. (They didn't emphasize that Atlanta steelworkers get higher pay than those in 11 other cities, equal pay to those in seven more; less than those in 30 other cities.

Labor chieftans also played up their claim that the wage increases they were demanding were needed to meet the cost of living in Atlanta, where, according again to BLS, cost of living is close to the top of the national scale.

The local men were obviously taking their cue from the elaborate survey of the BLS report prepared by the Building and Construction Trades Department of the AFL. In a recent monthly bulletin, the department combined the 1949 census figures on income with the BLS material, to come up with a table of average annual earnings for 1953 in all the construction trades.

The union calculations place structural metal workers at the top of the pile—with average annual earnings of $4,220 a year. Second were electricians, with $4,137, last were painters, at $3,003 and roofers and slaters at $2,808. Other calculated annual incomes were: Bricklayers, $3,149; carpenters, $3,543; cement finishers, $3,527; plasterers, $3,424; plumbers, $3,969; stone cutters, $3,394; tinsmiths and sheetmetal workers, $3,895.

Labor briefs

• **Cleveland "WPA"?**—Cleveland city officials moved to initiate a work program for 300 unemployed who are on relief. Reliefers would be paid 75 cents an hour to work in city parks and other city facilities—AFL and CIO union leaders want $1.44 an hour for such work.

• **Minimum wage**—Bowing to provisions of both major-party platforms calling for a minimum wage law, the New Mexico legislative interim committee met last week to consider a minimum wage law to be presented to the next regular session.

• **Department head**—Edward P. Park, formerly a building trades union official at Sacramento, has been appointed to a full four-year term as chief of California's Department of Industrial Relations. Park was named to the post in March 1953, to fill out an unexpired term.

• **Dispute to court**—A group of New York contractors working on the Air Force's big Plattsburg airbase has gone to the State Supreme Court in an attempt to force area carpenters to arbitrate their dispute over wages and overtime pay.

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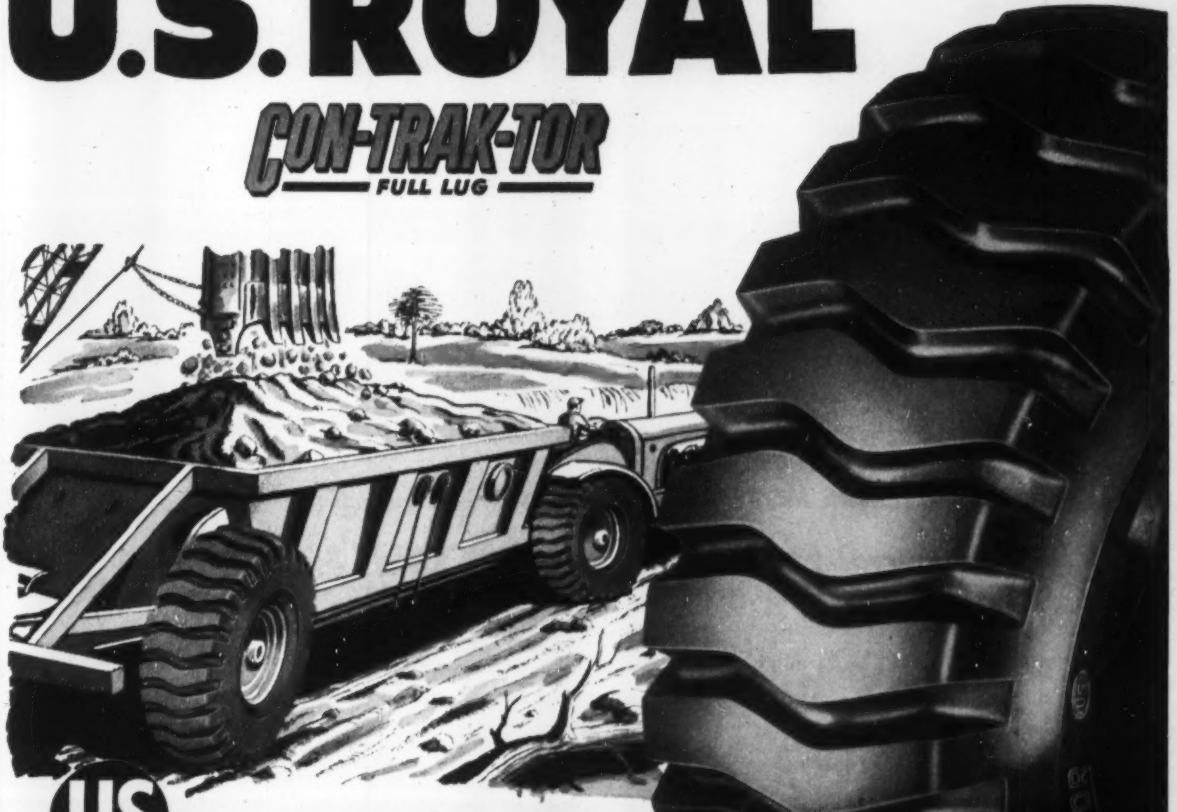
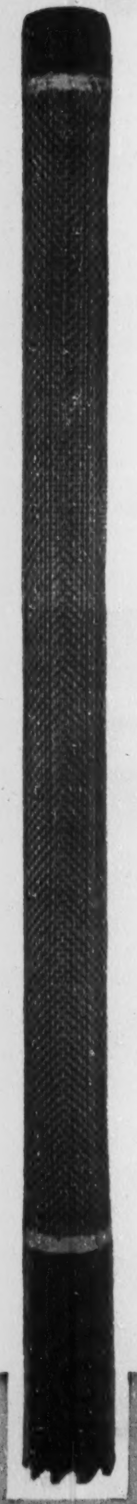


UNITED STATES RUBBER COMPANY



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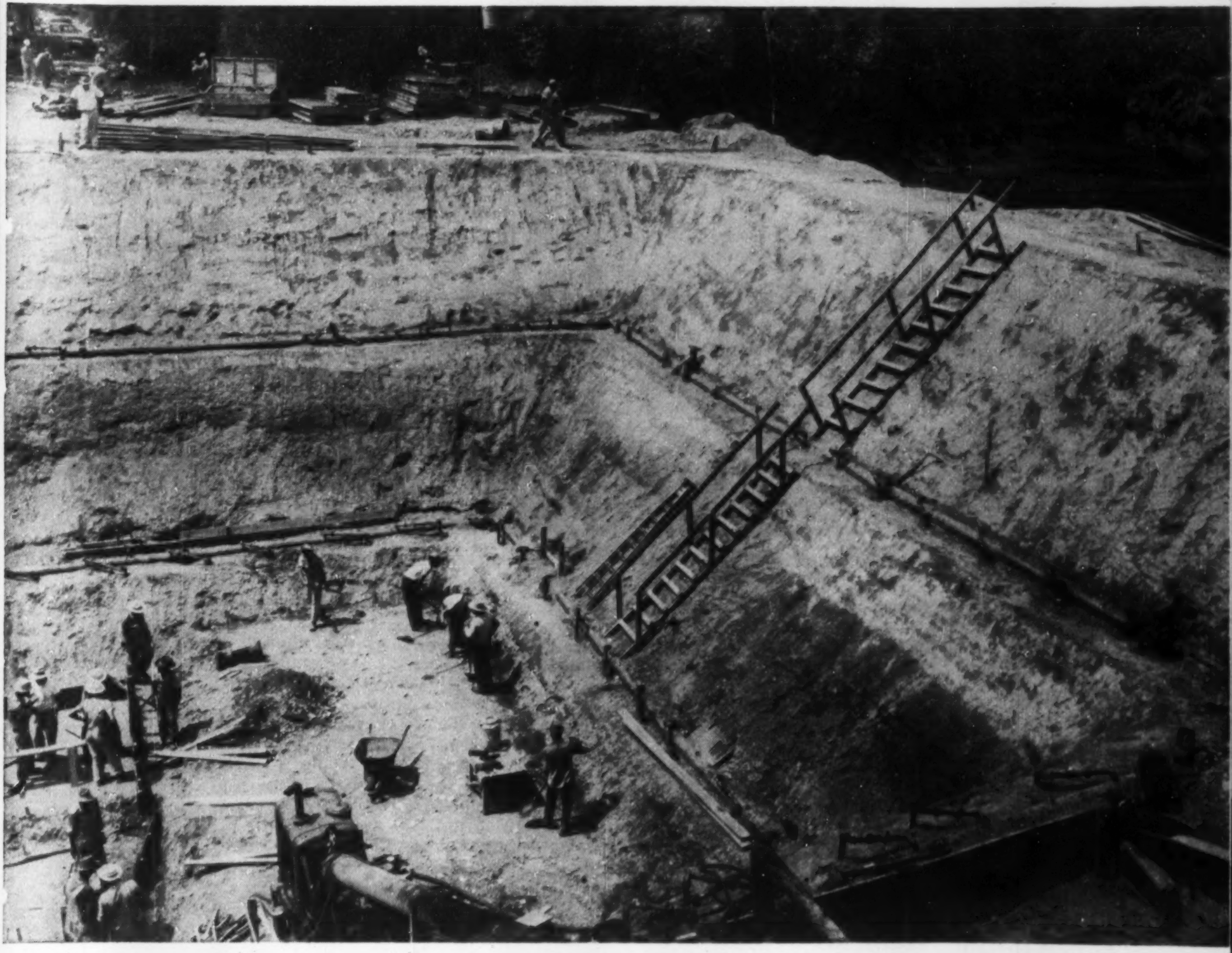

Pumping Contractor: American Dewatering Corporation, New York–Houston, Texas

PICTURE 22′ OF WATER IN THIS HOLE! That was the problem facing the contractor in excavating for a pumping station on the Ouachita River in Arkadelphia, Arkansas.

His first step was to install a Moretrench Wellpoint System. Although heavy gravel and marl at grade complicated the pumping operations, the Moretrench System controlled the water perfectly, and dry digging proceeded rapidly. Banks were sloped. Sheeting was unnecessary. *In 30 days, the excavation was down to grade. Time and money were saved!*

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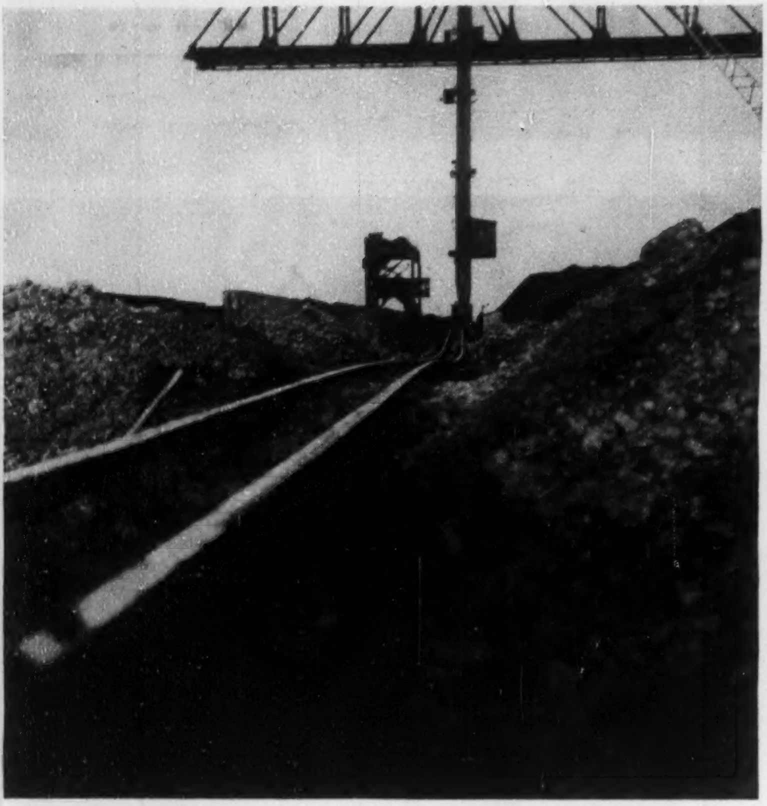


LET DOWN by poor subsoil stratum, orebridge track moved both vertically and laterally before corrective measures were adopted.

CLAY SLURRY placement for high vacuum wellpoint air-seal is muddy work.

Orebridge track stabilizer

Byron J. Prugh
Asst. Chief Engineer
Moretrench Corp.
New York, N. Y.

An unstable silt layer 18 ft. below ground level was the source of trouble at an orebridge track serving a steel plant in eastern Ohio.

The track foundation—a footing 700 ft. long—originally had been placed on soil deemed of good bearing on the basis of then existing knowledge of soil mechanics. However, extensive maintenance and repairs have become necessary during the last decade, due to excessive lateral and vertical movement of the orebridge foundation.

Investigations disclosed that yearly cyclic ore loading on the storage yard adjacent to the track, had created excess pore pressures in the silt layer.

The condition has been corrected with a permanent wellpoint installation.

Previously, wellpoints had not ordinarily been associated with silts, due to the erroneous assumption that wellpoints would not function properly in fine-grained soils. However, new installation techniques, coupled with the ability of wellpoint pumps to maintain a continuous high vacuum, have shown by performance the fallacy of the original assumptions. Little actual water has to be removed to change the properties of the fine-grained soils, including silts.

If the water pressure in a fine-grained soil is greater than the normal neutral (water) stress, it is called "excess pore pressure" or "excess hydrostatic pressure." This generally is caused by inability of the water quickly to escape from the voids when a load is applied. The retention of water may be caused by soil properties or by confinement, such as that imposed by an overlying impervious stratum. The excess pore pressure greatly reduces the shearing resistance of the soil by decreasing the effective stress. This may cause slides or movement if excessive loads are applied.

The orebridge foundation movement seemed to fall in this category due to artificially-created excess pore pressures.

If the pore pressures could be reduced, the shearing resistance of the silt layers would increase to such an extent that there should be no movement.

Average ground stratification revealed by borings is:

(A) Top 10 ft, mottled brown clayey silt and silty clay with fair compressive strength.

(B) Next 8 ft, wet, gray, clayey silt and silt.

(C) Next 9 ft, very fine, wet, grey, silty sand and silt.

(D) Next 20 ft, dry, hard, grey, pebbly, sandy, or clayey silt (till) with compressive strength over 5 tons psf.

Piezometers inserted to the bottom of silt layer "C" showed that the soil had pore pressures equaling a height of 5 ft above ground level. It was evident silty layers B and C were responsible for the foundation movement.

• **Wellpoints tried**—It was decided to install a pilot wellpoint system working under high vacuum to remove free water from the silt layers and reduce excess pore pressures. If successful, after performance observation over a period of several months, the pilot system was to be extended to a total length of 700 ft—most of the orebridge track length.

TRACK REALIGNMENT was possible after permanent wellpoint system was installed. Wellpoint header trench at left of track will be backfilled.

Holes were bored by an electric powered auger into the lower dry clay strata "D." This was an improvement in this kind of soil over conventional hole-driving equipment, permitting greater hole stability and consequent superior filter placement.

Wellpoints were inserted in these holes, and a sand filter was installed around each wellpoint to the top of layer "B." Above layer "B" the wellpoint was sealed with alternating layers of clay and plastic balls of mentonite and tamped to insure a good bond and the removal of air bubbles. This seal insured effective application of the vacuum to the silt layer, with subsequent removal of the free water.

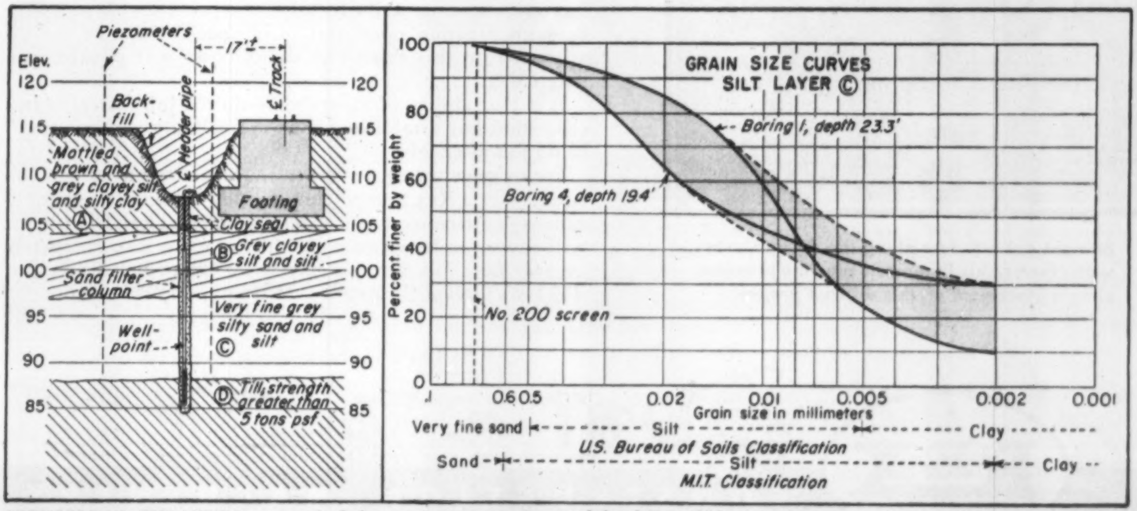
A compact 4-in. electric-powered wellpoint pump was designed to allow continuous application of 27 in. (mercury) of vacuum over the entire header.

As soon as holes were drilled through the upper clay layer, the pore-pressure measuring piezometer readings dropped from El. 120 to El. 110 and remained at that elevation as long as no external load was applied. When pumping was started the piezometer readings dropped 20 ft to El. 90 within 36 hours. After 48 hours of pumping, no fluctuations were observed when the orebridge moved over the area. A negligible quantity of water, but about two-thirds of initial rate, was pumped after the first two-day period of storage depletion. Quantity dropped another 10% and then leveled off after about two months of pumping. A 3-in. water head reduction in a piezometer 170 ft from the header was noticed after the initial two-day pumping period.

Based on the success evident after three months of observation, the wellpoint system was extended to the full length of 700 ft, with only minor changes in installation procedure. Header pipe and wellpoints were bitumastic coated both inside and out to reduce any possible corrosion due to chemical or electrolitic forces. An alarm system was installed to sound a warning in case the electric current stopped or the vacuum in the header pipe dropped below a set minimum.

After nearly one year's operation of the wellpoint system, there has been no apparent movement, either laterally or horizontally, of the realigned orebridge track. No free water or pore pressure can be measured in the piezometers near the track, and there has been a gradual lowering of the pore pressure underneath the ore piles in the storage yard.

Consultants for the stabilization work were Karl Terzaghi of Harvard University and Ralph B. Peck of the University of Illinois. Moretrench Corp. designed, installed and supervised the wellpoint system.



OFFENDING STRATUM was unshaded zone in cross-section at left. Minus-200 grain-size curves for samples in weak stratum are shown at right. Slight water removal strengthens the silt, but high-vacuum wellpoint pumpage is needed.

CONCRETE PUMPED...

General view of over-water deck section of Fore River Bridge that was placed entirely by a Model 160 Rex Pumpcrete.

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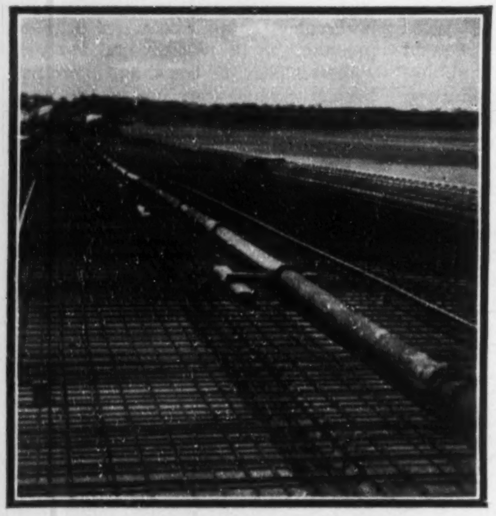

Straight out 600 feet along the deck to over-water forms, this Pumpcrete pipeline provides simple placement on this difficult project.

When faced with the problem of placing concrete in over-water forms on the $7,000,000 Fore River Bridge, contractor Ellis Snodgrass pumped it where it couldn't be carried—with a Rex Pumpcrete®.

Although there were other ways of doing the job, only Pumpcrete offered all the advantages of convenience, speed, and low-cost placement.

Located at the edge of the span, the Model 160 Pumpcrete was charged directly from the truck mixers. From there, 600 feet over the water to the forms, it was just a simple pumping through pipeline operation. And speed? Each of the 20 segments on this otherwise difficult job was poured in a single day.

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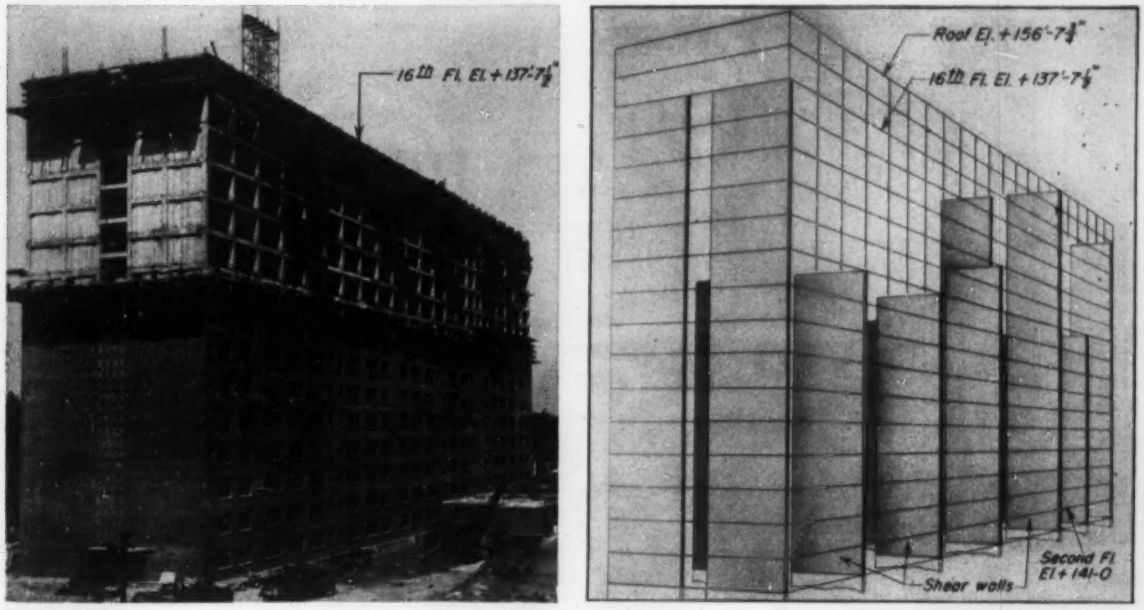


TALL, NARROW APARTMENT building in Chicago (left) has concrete shear walls (right) to reduce damage from cracking.

How to stop partitions from cracking

William Cohen
Design & Research
Structural Engineering Dept.
Holabird & Root & Burgee
Chicago, Ill.

While the trend to larger glass areas, unobstructed ceilings and fewer partitions means improved design appearance for multistory structures, the trend is also causing many structural engineers to again study the basics of bracing. It is becoming increasingly obvious that unless structures are sufficiently braced to reduce lateral movement to a minimum, damage from partition wracking may cost more for maintenance—throughout the lifetime of the buildings—than would be saved originally by construction that might not be properly braced.

A study of several existing multistory structures across the country, made by various materials manufacturers, strongly indicates the harmful effects of structural movement — whether the movement is caused by winds, earthquakes, contraction and expansion of materials due to temperature change, or dimensional change due to drying of cementitious materials taking place over a 12 to 18-month period. These movements do not necessarily indicate an unsafe structure, although they do produce unsightly cracks and hasten deterioration.

• **Full scale tests**—In a series of tests recently made in several buildings suspected of structural movement, partitions of almost every description were erected, one after the other, in identical locations. In each case where partitions were not isolated from structural framing, they cracked badly. On the other hand, where identical partitions were isolated from building frames, no cracking occurred.

When a building sways under wind load, each partition normally distorts from a rectangular shape to a parallelogram. While the deflection may be only about 0.3 in. for a partition in a 20-story building that moves 7 in. at the top, that's enough wracking to crack the partition. And if other movements occur, such as those caused by temperature change or drying out of concrete, are added to this sway, the damage increases.

• **Shear wall construction**—The means of providing adequate wind bracing in recently constructed buildings have been greatly reduced by the use of metal and glass enclosures, thin floor systems and light column sections. One solution our firm has found is shear-wall construction, which is both economical and efficient.

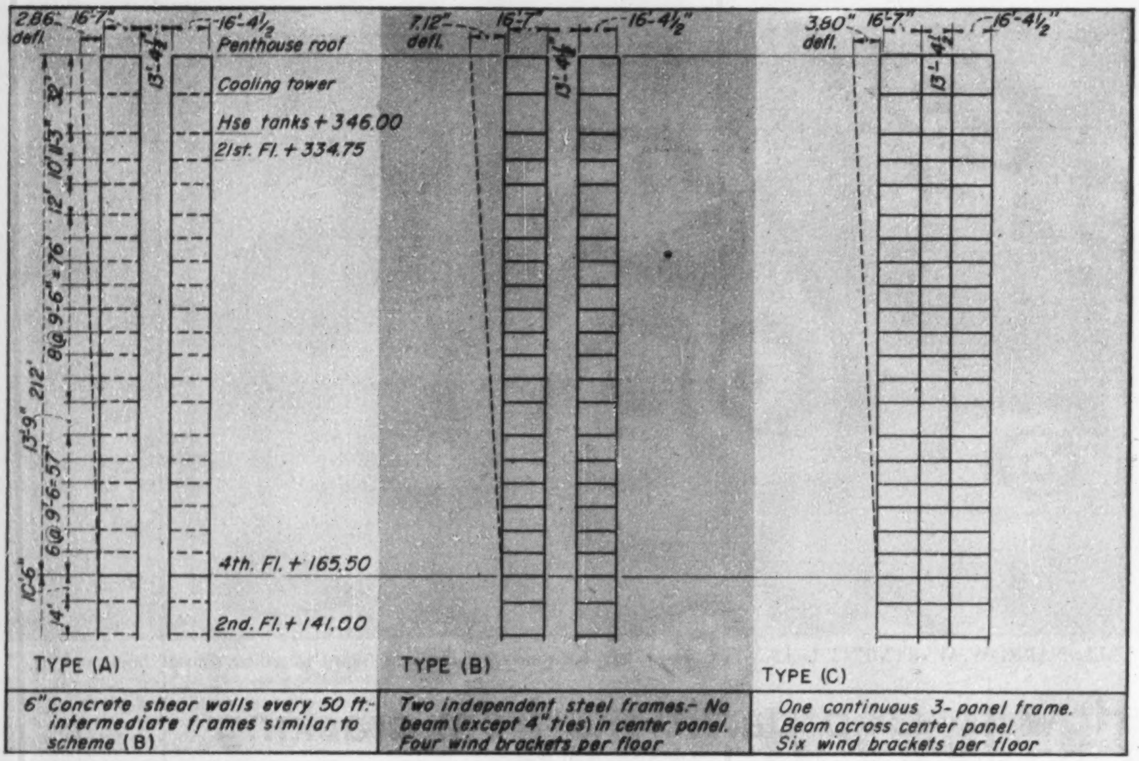
Reinforced concrete shear walls, though not new, deserve careful consideration by engineers interested in reducing building maintenance costs. Each shear wall acts as a solid plate, stiffened by the floor systems. Properly reinforced and given proper thickness and spacing, such walls add sufficient rigidity to reduce, if not eliminate, harmful partition wracking caused by structural movement.

• **Chicago apartment**—A good example is the shear walls incorporated in a tall, narrow apartment building, engineered by our firm, and now under construction at 60th St. and Langley Ave., in Chicago, for the Chicago Dwellings Association. They vary from 6 to 10 in. in thickness and are spaced about 50 ft. apart.

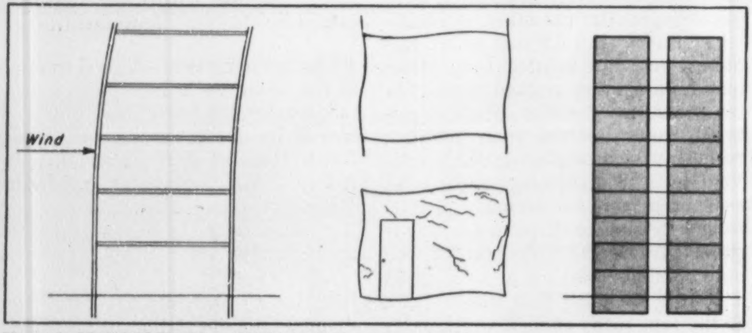
The 17-story building is 290 ft. long by 54 ft wide, the main roof being 142 ft above the first floor. Of reinforced concrete construction, it has a 5½-in. thick flat-plate floor system supported on square or rectangular concrete columns spaced longitudinally from 12 ft 7 in. to 13 ft 7 in. on centers. Transversely, there are two bays, each about 12 ft. wide, on both sides of a 6-ft corridor. A shear wall is placed at the third column line from each end of the building, and other shear walls at every fourth column line. This arrangement provides a spacing of about 50 ft for the concrete shear walls.

• **Wall height varies**—The shear walls are 24 ft long, extending to but not across the 6-ft corridor at the center of the building. In the vicinity of the penthouse, the shear walls rise to roof level. In other areas, they vary in

(Continued on page 36)


2.86" defl.
16'-7"
16'-4½"
13'-4½"
Penthouse roof
Cooling tower
Hse tanks + 346.00
21st. Fl. + 334.75
4th. Fl. + 165.50
2nd. Fl. + 141.00
32'
10'11.3"
12'
8@9'-6"=76'
212'
13'-9"
6@9'-6"=57'
10'-6"
14'
TYPE (A)
7.12" defl.
TYPE (B)
3.80" defl.
TYPE (C)
6" Concrete shear walls every 50 ft.- intermediate frames similar to scheme (B)
Two independent steel frames.- No beam (except 4" ties) in center panel. Four wind brackets per floor
One continuous 3-panel frame. Beam across center panel. Six wind brackets per floor

HYPOTHETICAL 23-STORY HOTEL—as studied for wind sway by Holabird & Root & Burgee—would sway only 2.86 in. with concrete shear walls (A), compared with 7.12 in. (B) or 3.80 in. (C), using two framing systems of "conventional" design.



WHAT HAPPENS IN A WIND: Tall, narrow building sways under wind (left), distorting the framing (center), cracking partitions and damaging door and window frames. Shear-wall construction (right) reduces sway and thus damage, too.

height. It is not necessary for these walls to be full-building height at all locations, since wind shears decrease as the top of the building is approached and the floor systems add to wind resistance.

Concrete forms and reinforcing were installed in the building to construct the shear walls in one-story lifts, permitting the concrete to extend a few inches above each floor level and the steel reinforcing to protrude beyond this. Reinforcing members of the shear walls thus were overlapped at each floor level, and the concrete protrusions carefully cleaned before placing fresh concrete so that homogenous walls were obtained from top to bottom. Each floor was joined to the shear walls in the usual reinforcing manner, and concrete was placed so that maximum strength was obtained at these points of connection.

A study made recently by Holabird & Root & Burgee for a proposed narrow, 23-story hotel compared the relative deflection under wind load of shear-wall construction and two types of "conventional" construction. As indicated in the accompanying sketches, a potential deflection of 7.12 in. achieved by one construction method (Type B) can be reduced to 2.86 in. by using shear walls (Type A)—and at less cost.

The savings are significant. Nevertheless, they are not nearly as important as the long-range savings that may accrue because of lower maintenance costs.

Record volume of freight moves on Missouri River

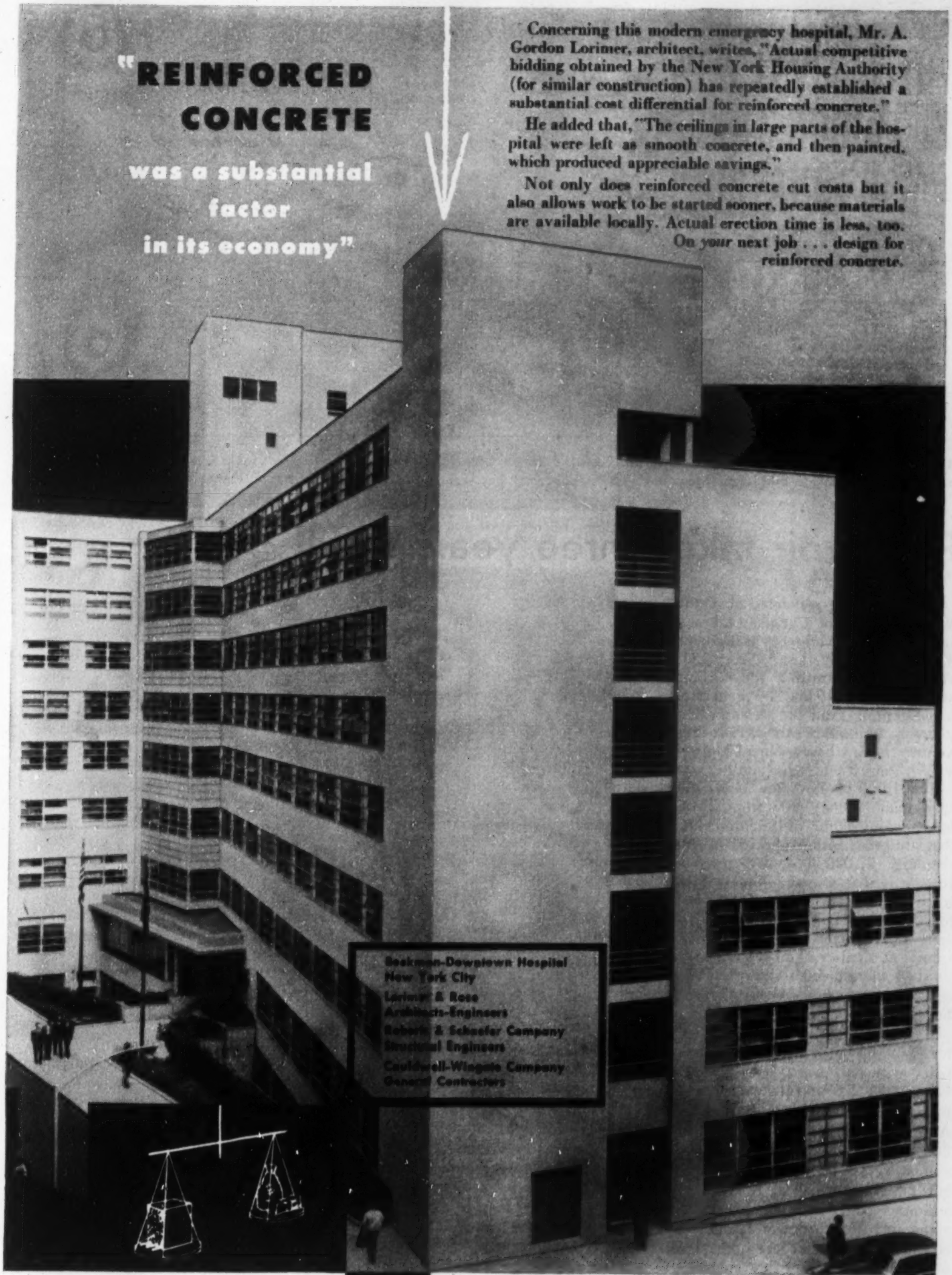
Missouri River traffic is up to record levels this year. With more than two months of the navigation season still remaining, the volume of commercial freight that has moved on the river is already more than the total for any previous year.

Brig. Gen. W. E. Potter, Division Chief of Engineers at Omaha, Neb., said that 168,000 tons of freight had moved on the river up to Aug. 20. This compares with 152,000 tons during the entire season last year.

Total traffic this year, according to Gen. Potter, may be 250,000 tons.

Stabilization and navigation work on the river, he said, now is 75% completed from Omaha to the river's mouth above St. Louis, Mo. Funds appropriated by Congress this year will enable the Corps of Engineers to resume the channel project between Sioux City and Omaha.

So far, $210 million have been spent on Missouri River work between Sioux City and the mouth. Before the work is completed, the total will reach $333.6 million.



"REINFORCED CONCRETE was a substantial factor in its economy"

Concerning this modern emergency hospital, Mr. A. Gordon Lorimer, architect, writes, "Actual competitive bidding obtained by the New York Housing Authority (for similar construction) has repeatedly established a substantial cost differential for reinforced concrete."

He added that, "The ceilings in large parts of the hospital were left as smooth concrete, and then painted, which produced appreciable savings."

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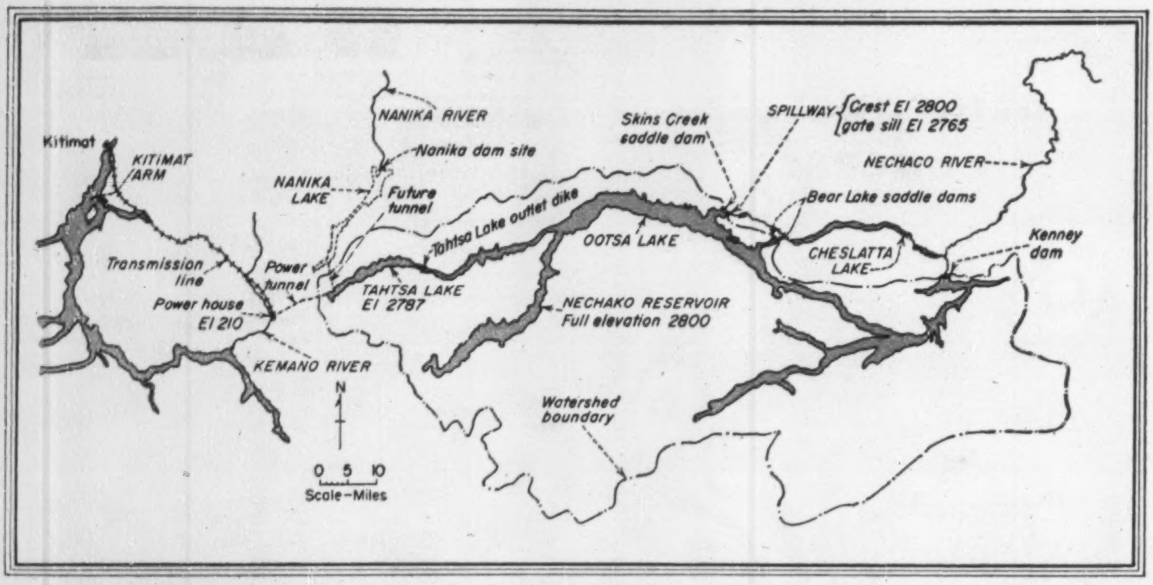

HUGE RESERVOIR for Aluminum Company of Canada's British Columbia project has been filling for 2 years and is expected to reach spillway level late next year. Meantime, Tahtsa Lake part has enough capacity to operate three 140,000 generators at Kemano.

Reservoir takes three years to fill

Power is being generated at Aluminum Company of Canada's fabulous underground powerhouse at Kemano, B.C., (ENR Nov. 13, 1952, p. 31). Yet the water turning the turbines for the three 140,000 hp generators is not coming from the 145-mile long reservoir formed by the 345-ft high Kenney Dam (ENR Jan. 22, 1953, p. 35). And it won't for another year.

The 1,000 cfs flow now being used at Kemano comes only from Tahtsa Lake, westernmost of the nine lakes that are being interconnected to form the huge 22,000,000-acre-ft reservoir. Reason is that reservoir level will not reach the natural level of Tahtsa Lake for another year yet. And that is in spite of the fact that the diversion tunnel at Kenney Dam was closed almost two years ago—Oct. 8, 1952—and that water depth at the dam now far exceeds 200 ft.

This is all according to plan. Full reservoir surface is at El 2800 as compared with the normal level of Tahtsa Lake at El 2787. (Intake for the 10-mile long power tunnel is at El 2725.) And the additional 5,000 cfs firm flow provided by the rest of the reservoir will not be needed until more generators are added at Kemano. No announcement has yet been made about increases in power capacity—it's contingent on need for more aluminum production. But best guesses are that it will be 1956 at the earliest, probably 1957. And by that time full reservoir capacity will be available.

Just to make sure there is enough water in Tahtsa Lake for present needs, a small rock dike has been thrown across the outlet to the lake. And reversing this thinking, should water from the main part of the reservoir be needed earlier than anticipated, engineers are prepared to dig a channel to El 2770 to facilitate reverse flow.

In summary, the present Nechako development has a total firm flow of 6,000 cfs which means 1,400,000-hp firm power. This results from a 5,475-sq mile catchment area. Surface area of the reservoir is 357 sq mile as compared with the 178-sq mile natural lake surface.

Live storage in the 22,000,000 acre-ft reservoir will be 6,750,000 acre-ft. But normal draw-down for full powerhouse operation will be only 7 ft. Draw-down for the most improbable 7-year drought will be only 17 ft.

When needed in the future, firm flow can be increased another 1000 cfs making firm power capacity become 1,670,000 hp. This will be accomplished by adding Nanika Lake to the system. Involved in this addition would be construction of a dam and outlet tunnel.

• **Gates go in**—Meanwhile, the large radial gates for the spillway structure are being fabricated and will be installed late this summer. The structure proper was completed last year although water level is not expected to reach it until next year. Full reservoir level of El 2800 is established by the overflow section of the spillway. Sill for the two 35x35 radial gates is at El 2765. Two overflow sections of the spillway structure add to the capacity making it more than ample to pass the 20,000 cfs spring floods.

The spillway is located 40 miles west of Kenney Dam just above a small tributary to the Nechako River. First flow of spilled reservoir water down this stream promises to be an interesting hydraulic phenomenon. Level of the stream falls 69 ft in the first ¾ mile below the spillway until it reaches a small lake. Never before has more than a trickle gone down this stream. What will happen when a, say, 5,000 cfs flow hits the channel remains to be seen.

From the first small lake, spilled water flows down a 12-mile length of stream that includes a 200-ft drop into the 20-mile long Cheslatta Lake. This drop of 200 ft in 12 miles compares with the normal drop of the Nechako River of about 3 ft in a mile. Water will be released down this stream system at least by September, 1955. Minimum flow of 1500 cfs must be maintained in the Nechako to satisfy downstream demands including fish propagation.

Another little emphasized fact concerning the reservoir is that well over 1,000,000 cu yd of fill has gone into saddle dams at the various points. Three such dams are located near the spillway at Skins Creek and three more are located at Bear Lake part way be-

SPILLWAY STRUCTURE was completed last year, will have two 35x35-ft radial gates installed this year and will spill water for the first time next year.

SADDLE DAMS for reservoir were completed last year. More than 1,000,000 cu yd of fill went into 6 separate small dams.

tween the spillway and Kenney Dam. All of these saddle dams were completed in 1953. Thus the only work that remains on the reservoir is installation of spillway gates and the possible dredging of a channel between Tahtsa and Ootsa Lakes.

P. E. Radley is manager of the Aluminum Company of Canada's British Columbia Project. Design of the hydroelectric features of the work was done by British Columbia International Engineering Co., Ltd. W. G. Huber was chief engineer.

SURVEYING NEWS

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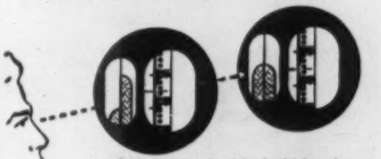

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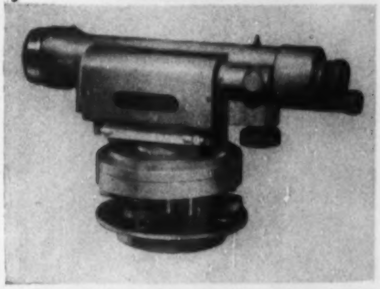

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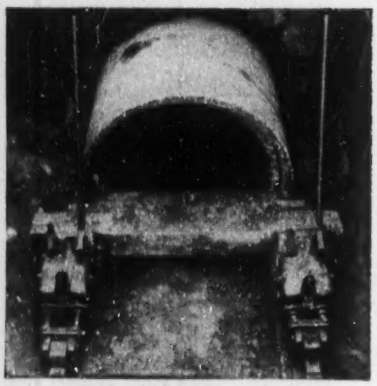

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MUNICIPAL

Blast due to over-age mains, sewers

Consultants, probing Philadelphia gas explosions, advise tighter inspection and faster schedule of rehabilitation

Recommendations that Philadelphia improve its maintenance and inspection services on water and sewer lines and step up its replacement schedule have been made by consulting engineers engaged by the city to investigate two recent gas explosions.

Over-age water mains and sewers were responsible for one of the explosions and could cause others, according to the findings of the New York consulting firm of Ford, Bacon & Davis. Faulty installation of a gas service line by a gas company crew was determined as cause of the second.

The firm was engaged April 6 to make the study of the city's subsurface utility lines—water, gas and sewers.

• **Findings**—Its principal findings:

1. The system of preventive maintenance and inspection by the gas company (Philadelphia Gas Works Co.) is effective, but the city should expand its maintenance and inspection of the water and sewer lines. All subsurface lines should be treated as one interrelated group of services.
2. The average annual loss of gas in the system is less than 2%—substantially less than that considered permissible for safe operation.
3. In four test areas, including two in South Philadelphia, the gas systems were essentially gas tight and any leakage which may exist is not sufficient to be hazardous.
4. Some existing sewer lines are over-age and hazardous because of their "brick arch" construction.

The engineers found that an explosion last Feb. 28, resulted from an accumulation of gas in a cavity under the street. A second on May 9 was attributed to gas which leaked from the end of a newly-installed service line. "The end of the line was either not closed or the closure was not secure," the report said. "The gas escaped into a basement and was ignited by an oil burner pilot light."

• **Recommendations** — Consultants recommended that the city form a permanent substructure committee with competent and qualified personnel to "formulate and direct a continuous schedule of underground inspection, and having the necessary personnnel and equipment to carry on systematic field operations.'"

Other recommendations included:

- A program of sewer rehabilitation.
- An accelerated schedule of water main replacement and completion of the metering program.
- Air pressure tests and checks of all new service lines and replacements before gas is admitted or meters are connected.
- Sectionalized leakage tests, similar to the four conducted by the engineers. All sections should be tested at least once every five years.
- Replacement of a service line over 50 years old.
- Replacement of all old lines in the standard system under 1¼ in. with larger lines.
- Replacement of all service lines wherever excessive corrosion has occurred.

Ohio town sees windfall in turnpike

The city of Elyria recently lost a bitter and long fight to keep the Ohio Turnpike from its doorstep. A few miles east of Elyria on the pike right-of-way is Strongsville, a Cleveland suburb that is getting ready to cash in on the toll road in a big way.

Last week wraps were taken off a proposal that could add $50 million to the tax receipts of the suburb, located about 15 miles southwest of Cleveland's public square.

Using the pike as a selling point, a private group, aided by the community and industrial development experts, hope to see trucking companies and medium-sized manufacturers build on a 490-acre site, zoned for these purposes.

The tract is less than one mile from the only turnpike interchange within the Greater Cleveland area. Trucking companies are being sold on the idea of using the site for terminals, where freight from the toll road could be stored or transferred for shipment into the surrounding area.

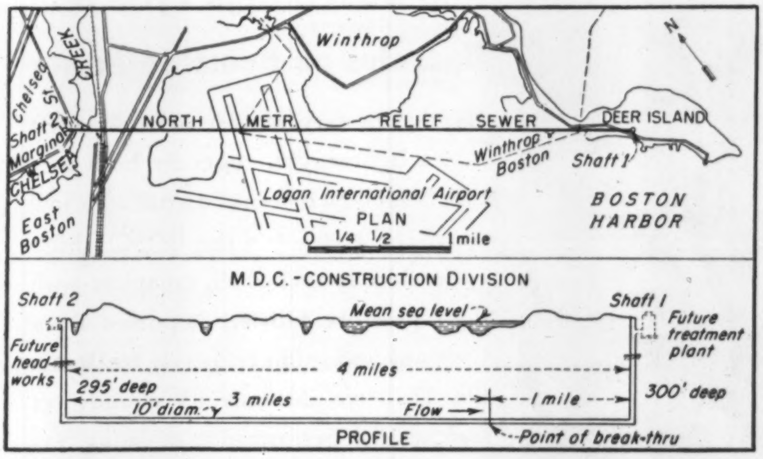
Manufacturing prospects, it is said, would enjoy not only the advantages of fast truck service, but would also have rail delivery. The Baltimore & Ohio Railroad, which has acted as a consultant in development of the area, plans to put down approximately $50,000 in railroad siding in order to service the site.

A Cleveland attorney, Lloyd F. Loux, who is spokesman for the developing interests, said the whole project is due to "snowball" momentarily. The only things that are needed to put the commercial community in business are roadways on the property itself.

Given credit for the idea was Ernest Green of the Loesch & Green Construction Co., a division of the American Construction Co. Howard Green, Ernest's brother, and Vernon Clarke of the contracting firm, are among the principals active in the venture.

Last year the Strongsville chamber of commerce secured options on the land, which were then taken up by American Construction Co. The site is adjacent to an area on Cleveland's southwest side which has witnessed large postwar expansion, mainly in small and medium-sized manufacturing.

Backers visualize a construction investment by tenants of about $40 million.



Sewerage program marks new advance

Boston's $75 million sewerage program has reached an important milestone with the recent holing through of the north metropolitan sewerage tunnel, stretching for four miles to connect Chelsea Creek headworks shaft No. 2 with Deer Island in Boston Harbor.

The tunnel is one of the principal features in the Metropolitan District Commission's sewage collection and treatment program, which is designed to help clean up pollution in Boston Harbor and its main tributaries, the Charles and Mystic Rivers.

Until the projects are completed and in operation, raw sewage will continue to be discharged directly into the harbor through outfalls at Moon and Deer Islands.

Besides the north metropolitan tunnel, the program calls for the construction of large sewers on both sides of the Charles River, a tunnel from a shaft near Ward Street in the City of Boston to Deer Island, and a new treatment plant on Deer Island.

The north metropolitan tunnel is to be concrete-lined with an inside diameter of 10 feet. Its capacity will be 350 mgd. It is being constructed by S. A. Healy Company and Mainucci Bros. & Co., Inc., of Boston at a bid price of $6 million.

The South Boston tunnel (Ward St. to Deer Island) will be 11 feet in diameter and approximately seven miles long.

A planned sewage treatment plant to be located on Deer Island to treat sewage from both tunnels is said to be the largest in the world. It will have a treatment capacity of more than 800 mgd.

Sewage from the southern portion of the district is now being treated by a similar though smaller disposal plant which was recently completed at Nut Island by the MDC's construction division.

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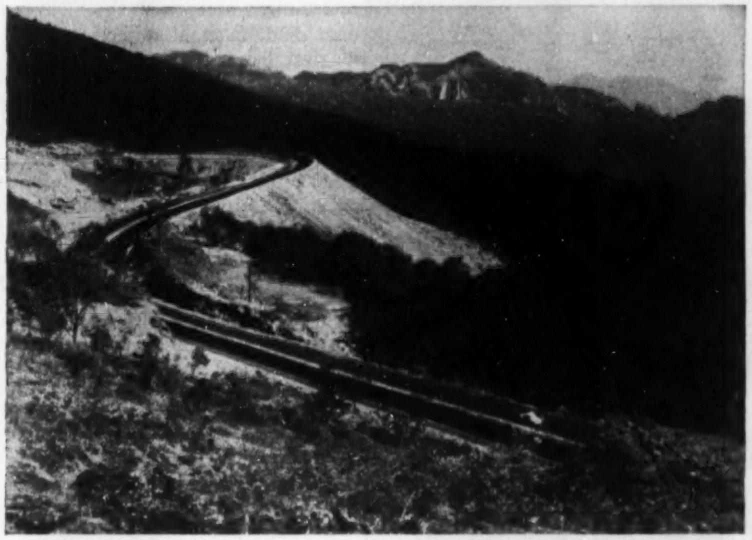


MEXICO CITY-ACAPULCO TOLL HIGHWAY runs through mountainous country almost all the way. Note high fill on this curve near Cuernavaca.

Mexico City—Acapulco six-lane highway, long-awaited, to be opened in November

This November an old dream of a superhighway connecting Mexico's capital city, high on a temperate plateau, and the recreational facilities of tropical Acapulco will become a reality.

According to present plans of the Mexican Highway Department, a completely rebuilt route will be completed by late fall. The 261-mile highway drops from Mexico City's 7,600-ft altitude down to sea level while crossing the continental divide at 10,000 ft. The route comprises two toll sections of divided six-lane highway and a government freeway built to standard specifications of the highway department.

Although the new route is only some 20 miles shorter than the previous Mexico City-Acapulco route, travel time is cut from an average of 9½ hours to 6 hours and 20 minutes. This has been done principally by reducing about 2,300 curves to 810 and keeping all grades under 4%. Standard grades on the old route had been 6%. Width of the roadway in the narrowest parts has been widened from 23 ft to 40 ft.

The highway consists of three main parts. The first is a toll superhighway, completed in October 1952, that runs 50 miles from Mexico City to Cuernavaca. Toll for this section is 40 cents. The second section, an 80-cent toll ride, covers the 68 miles from Cuernavaca to Iguala. It has been in use two years. The last leg of the road is a freeway to Acapulco, now nearing completion, replacing an existing highway.

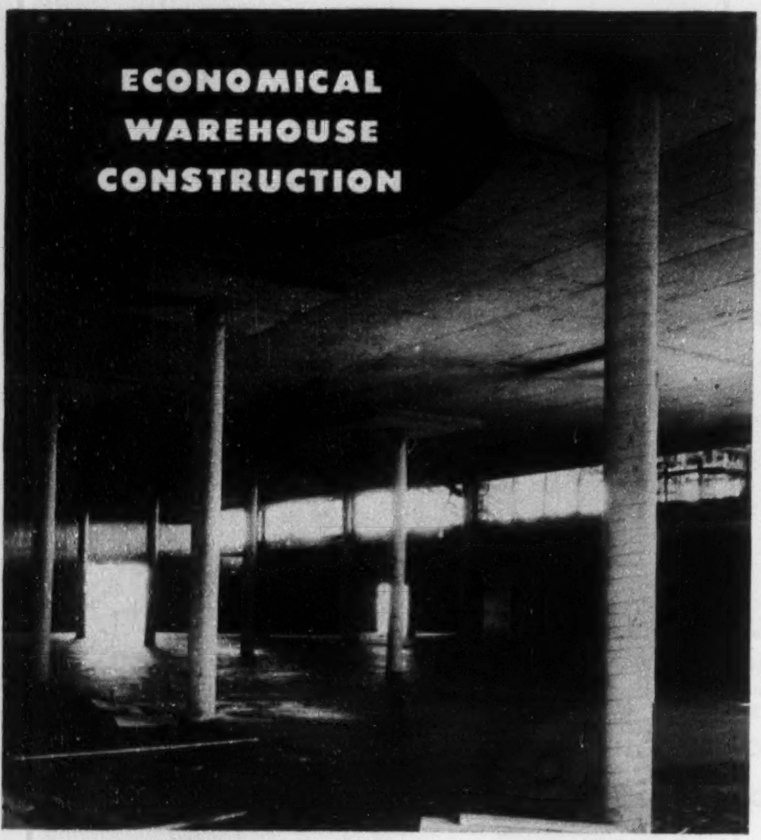
- **Zopilote canyon**—Work on this final section has been the most difficult—notably due to the problems presented by Zopilote canyon, which carries the narrow channel of the Zopilote River through a treacherous mountain area.

In the 15-mile length of the canyon, the river had to be crossed 16 times. But, at only one spot has a bridge had to be built. Engineers have handled the other crossings in

(Continued on page 44)

THROUGH MOUNTAINS where rock removal was costly small islands as median dividers allow narrower road.

ZOPILOTE RIVER was crossed 16 times, in mountain canyon, 7 times by channeling it in concrete tunnels.



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The round concrete columns for this warehouse were formed with low cost SONOTUBES of 13.5" I.D. 17' in height.

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this way: In seven places, they have diverted the river into 26-ft dia concrete tunnels over which the highway runs. And, in eight other instances, the river has been channeled to one side of the highway with rock fill or concrete channel.

Operations in the steep canyon were harrassed constantly by rock slides, especially in the rainy summer season. The river is subject to heavy floods—bad enough on one occasion for a road roller to be washed away.

Another complicating factor was that during construction of the new highway, the old road through the canyon had to be kept open, because it is the only land communication with Acapulco and is used to truck in most of the food for the thriving tourist trade there.

• **Dangerous work**—The worst point in the job was at Corte Negro, or Black Cut, where slides were almost a daily occurrence and it was necessary to remove 130,000 cu yd of spoil alone. Six people were killed in Corte Negro when a shovel pulled out a rock and started an unexpected slide. The final cut is 148 ft deep and 2,300 ft long.

Altogether 13 persons have been killed to date in Zopilote canyon. One was a workman who had the bad judgment to take a siesta behind a sheepsfoot roller which backed over him.

Contractor for the Zopilote canyon section was the Delta Construction Co., Mexico City, which claims to have lost considerable money on the work. Other contractors working on the final section of the highway are: Cia. Constructores Nacionales S. A., Cia. Constructora El Aguila S. A., Cia. Constructora de America S. A., Cia. Mendez y Villela S. A., Cia. Constructora Juarez S. A. Consultants to the Mexican Highway Department were Raul Dominguez Cueva and Jose Villanueva Aguilera.

International Briefs . . .

• **Raising steel output**—Two more national steel plants will be set up in India by 1961 under a new 5-year plan aimed at raising annual steel output to 5,000,000 tons. (Present production: 931,000 tons.) The states of West Bengal, Bihar and Madhya Pradesh are among those being considered for the site.

• **Tunnel to Kashmir**—A German company (Baresel & Kunz) has been awarded a $778,000-contract to build the first stage of India's $6-million Bahihal Tunnel, a project designed to provide an all-weather link to Kashmir.

The 1¾-mi tunnel, to be bored at a height of 7,250 ft, will carry road and rail traffic from Jammu to the Kashmir Valley and Sprinagar through an 11,000-ft high mountain range.

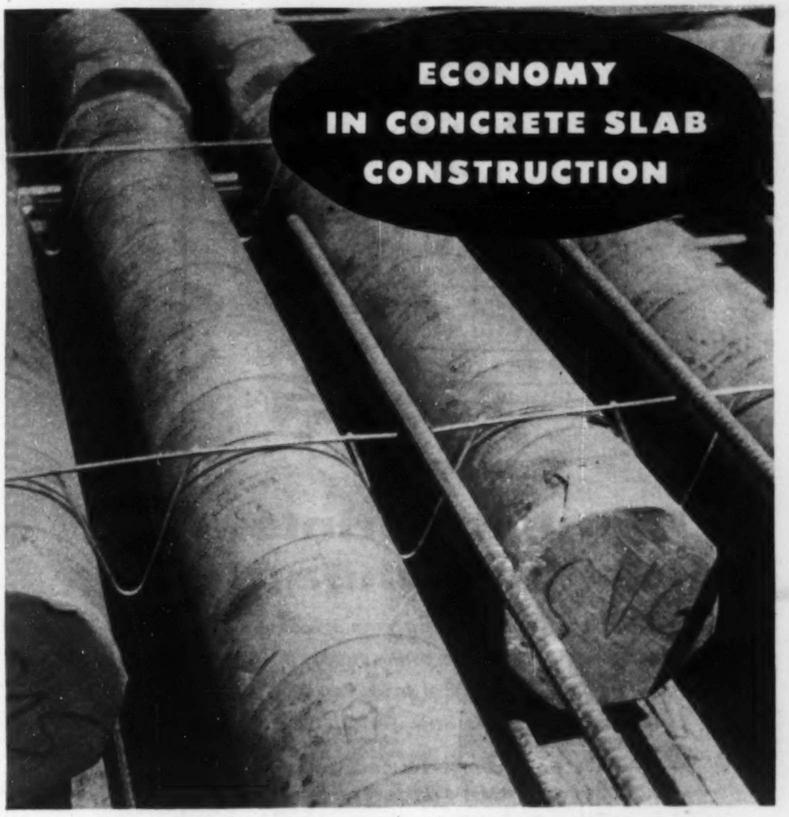
• **Sicily bridge progress**—A new company—the Societa Per Il Ponte Ullo Stretto Messina—has been formed to build the suspension bridge over the Straits of Messina. The bridge, designed by U.S. engineer David B. Steinman (ENR, Oct. 12, 1950 p. 31) will link the Italian mainland with Sicily. The Italian government, which just completed favorable traffic studies on the project, has assured the company it will guarantee bonds up to 7% interest.

• **Mining region railroads**—Canada is considering building two new railways to open up northern mining areas. One would run 300 mi between Grimshaw in northern Alberta and the south shore of Great Slave Lake in the Northwest Territories. The other, a 460-mi line in Quebec province, would connect Mt. Laurier (north of Montreal) with the shores of James Bay.

• **Power expansion plan**—This fall Austria plans to apply for a $11.5-million World Bank loan to expand the Lunersee power works group in Vorarlberg province. Total cost of the work: $35 million. The project, which will be part of the Ill River power net, calls for damming the small Luener basin so it will hold 76,000,000 cu meters of usable water.

• **Canadian hydro scheme**—A $150-million hydro-electric scheme involving damming Homathko River at the head of Bute Inlet, 140 mi north of Vancouver, B.C., is being backed by U.S. and eastern Canadian banking interests. The project, headed by Waddington Mining Corp., Ltd., Vancouver, also includes a smelter at Waddington Harbor. Initial plans call for developing 500,000 hp by a series of dams and generating stations running from Tatlayoko Lake to the mouth of Homathko River.

• **Snowy Mountains savings**—Australia has given the green light for continuing work on the $1-billion Snowy Mountains hydro-electric scheme after special studies proved its power would be economical. Critics have urged revision because they believe thermal power cheaper. But according to the studies, operating the hydro-electric stations for 11 hours daily (load factor: 46.7%) would cost some $3.2 million less than the cheapest thermal power.



Central Assembly Church of God, Denver, Colo.
R. D. Peterson, Architect;
J. W. Sallada, Design Engineer;
Jack Cys, Contractor

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for voids in concrete construction

Hollows formed by inexpensive SONOVOIDS reduced the square foot cost of this concrete structure.

Illustration shows new method of spacing and anchoring SONOVOIDS by means of prefabricated lightweight metal wire.

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SONOVOIDS are supplied in specified lengths or sawed to your requirements on the job. Sizes 2″ to 36.9″ O.D. up to 50′ long. End closures factory applied or supplied separately.

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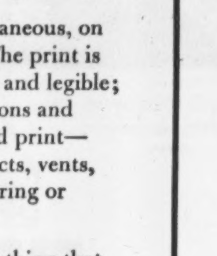

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OBITUARIES

William Buxman, 70, manager of Engineering News-Record from 1917 to 1923 and later assistant to the vice president in charge of the engineering publications of the McGraw-Hill Publishing Co., died August 27. He had retired a few months ago.

Following the outbreak of World War I, when there was great need for engineers and construction men for highway work in France, Mr. Buxman sponsored the advertising campaign in Engineering News-Record that resulted in the enlistment of hundreds of such men in the many companies that made up the Twenty-third Engineers, which companies did the great bulk of the highway construction in France.

James D. D'Arcy, 52, an assistant engineer for Buffalo, N. Y., in its division of engineering, died August 5. He started his career with the division in 1926 as a rodman.

Robert D. Canfield, 59, Arizona highway engineer since July, was killed August 8 in an automobile accident. He had been with the road department for 25 years and served as deputy engineer since 1951.

C. Albert Kulmann, 54, San Francisco consulting engineer and authority on nomography, died August 3. Before establishing his own office, he worked with Pelton Water Wheel Co. as design engineer and with Barrett & Hilp as engineer in charge of design and supervision of engineering installations at Hunters Point Naval Shipyard, San Francisco. He was a graduate of Stanford University.

Arthur Ruettgers, 65, former chief of the Bureau of Reclamation's Denver laboratories, died August 8 in Denver. A graduate of Allegheny College, he received a master's degree in civil engineering from the University of Michigan in 1915. He went to work for the Bureau in 1915 and took over the Denver post in 1929.

Joseph R. Farley, 42, a civil engineer with the New York State Department of Public Works, died August 10 in Syracuse, N. Y. He was a graduate of Syracuse University.

George S. Groesbeck, 85, former civil engineer with the New York City Board of Education, died August 10 in Port Chester, N. Y. He was a graduate of Rensselaer Polytechnic Institute.

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
October Materials, and Labor Prices will appear in October 7, 1954 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4: over.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	50 c.y., del.
Atlanta	$3.87	$3.56	$3.40	$2.075	$2.075	$1.83	$2.20	$2.20	$1.99	$1.99	$0.21	$0.21	$12.06
Baltimore	3.99	3.60	3.53	2.60‡a	2.60‡a	2.00‡a	2.75‡a	2.80‡a	2.65‡a	2.60‡a	.17	.17a	11.45
Birmingham	3.47	2.75e	....	2.25n	2.25n	2.08n	2.64	2.64	1.35	1.45	.165	.165	11.00
Boston	4.16	3.84	3.96	2.50a	2.50a	2.50a	1.50a	1.60a	.....	.....	.215	.245a	12.50h
Chicago	3.63	3.32	3.35	3.25‡b	3.25‡b	3.65‡b	3.25‡b	3.25‡b	2.25‡	2.25‡	.23	.23b	12.00
Cincinnati	3.91	3.70	3.70	2.19‡c	2.24‡c	2.24‡c	2.54‡c	2.54‡c	.....	.....	.205	.225a	10.95
Cleveland	N. A. in C. L.	3.19e	....	2.05f	1.85f	1.65	4.10a	4.10a	3.35‡	3.15‡	......	.22	14.40d
Dallas	3.15	2.85	2.90	2.18	2.28	1.84	2.22	2.38	.....	.....	.11e	.2675	9.40
Denver	4.24	3.94	4.24	1.85	2.00	1.20	....	....	.....	.....	.23	.255a	10.50
Detroit	3.72	3.17	3.50	4.50‡b	4.50‡b	4.00‡b	3.75‡	3.75‡	4.25‡	4.25‡	.21	.21a	12.70f
Kansas City	3.67	3.47	3.30	1.85‡	1.85‡	1.50‡a	2.00‡a	2.00‡a	.....	.....	.22a	.25c	12.50b
Los Angeles	4.72a	4.26a	5.20	2.21a	2.41a	2.21a	2.16a	2.26a	.....	.....	.135fm	.245m	11.88lh
Minneapolis	4.10h	3.79h	3.71	2.70‡ag	2.70‡ag	1.60‡ag	3.25‡ag	3.25‡ag	.....	.....	.19i	......	12.75hk
Montreal	3.16ac	2.96ac	....	3.00e	3.00e	2.25	1.65ij	1.90ij	.....	.....	.20	.20a	10.55ab
New Orleans	3.50	3.17	3.48	2.44	2.44	2.00	....	....	1.05	1.25	.275	......	12.90
New York	4.01	3.70	3.53	2.85bk	2.85bk	1.90bk	2.70bl	2.70bl	.....	.....	......	......	14.05an
Philadelphia	3.58/3.97‡	3.27/3.64‡	3.58/3.63‡	2.75‡*p	2.75‡*p	2.15‡*o	2.30‡	2.40‡	2.00	1.90	.22/.25	......	12.50do
Pittsburgh	3.62	3.34	3.62	2.25‡	2.25‡	2.20‡	2.60‡	2.60‡	2.15	2.15	.22d	.28	13.00
St. Louis	3.55/3.78b	3.25/3.51b	3.40/3.57	3.10am	2.90am	2.30/2.90am	1.70j	1.70j	1.50	1.50	.22	.28ci	11.90
San Francisco	3.67	3.27	....	2.07	2.07	2.17	2.22	2.22	.....	.....	......	.28cl	12.15e
Seattle	4.80a	3.55a	5.95h	3.50‡bm	3.50‡bm	3.50‡bm	4.00‡bm	4.00‡bm	.....	.....	.25i	.3325i	12.30i

‡ Delivered. * Prices incl. dealers discount except as noted.
CEMENT: *a* Subj. to 10¢ dis. *b* Less 2% for cash. *c* CL price dealers discount not incl. *e* Truckload lots, destination price. *h* LCL. SAND, GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *e* ½". *f* Pea gravel. *g* Less 5% for cash. *h* Less than 5 tons. *i* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots asd. *l* F.o.b. scow Hudson river. *m* Less 2% for cash. *n* F.o.b. cars. *o* 1–3 mi zone. *p* Add 10¢ for ea. add'l mi zone.

CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete *e* 5¼ x 8 x 12 in. *f* 8 x 4 x 16. *g* F.o.b. truck at job. *i* Less 2% for cash *j* Less 1% for cash. *l* F.o.b. plant San Rafael. *m* F.o.b. yard
READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10–100 cy. brackets. *d* 1–3 mi. zone. *e* 2,000 lb comp. *f* 2500 lb. comp. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash. *k* Sales tax included. *l* 1:2½:4. *m* F.o.b. yard. *n* Plus escalator clause. o Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 30¢ per bbl., not refundable

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn	$2.90†	Buffington, Ind	$2.85†	Steelton, Minn	$2.95†	Muskegon, Mich	$3.00†	Toledo, O	$2.90†
Clinchfield, Ga	2.90†	Independence, Kan	2.80†	Leeds, Ala	2.75†	Saginaw, Mich	2.90†	Milwaukee, Wis	3.05†
Kingsport, Tenn	2.90†	Hannibal, Mo	2.85†	Duluth, Minn	2.95†	Wyandotte, Mich	2.90†	Green Bay, Wis	3.05†
West Des Moines, Iowa	2.95†	Northampton, Pa	2.75†	Hudson, N. Y	2.75†	Buffalo, N. Y	2.85†	Ironton, O	2.75†
Nazareth, Pa	2.75†	Universal, Pa	2.95†	Alpena, Mich	2.80†	Oswego, N. Y	3.00†	Montreal City	2.66
Bath, Pa	2.75†	Waco, Tex. (+ 10¢ tax)	2.60†	Detroit, Mich	2.90†	Cleveland, O	2.90†	W. Winfield, Pa	2.95†

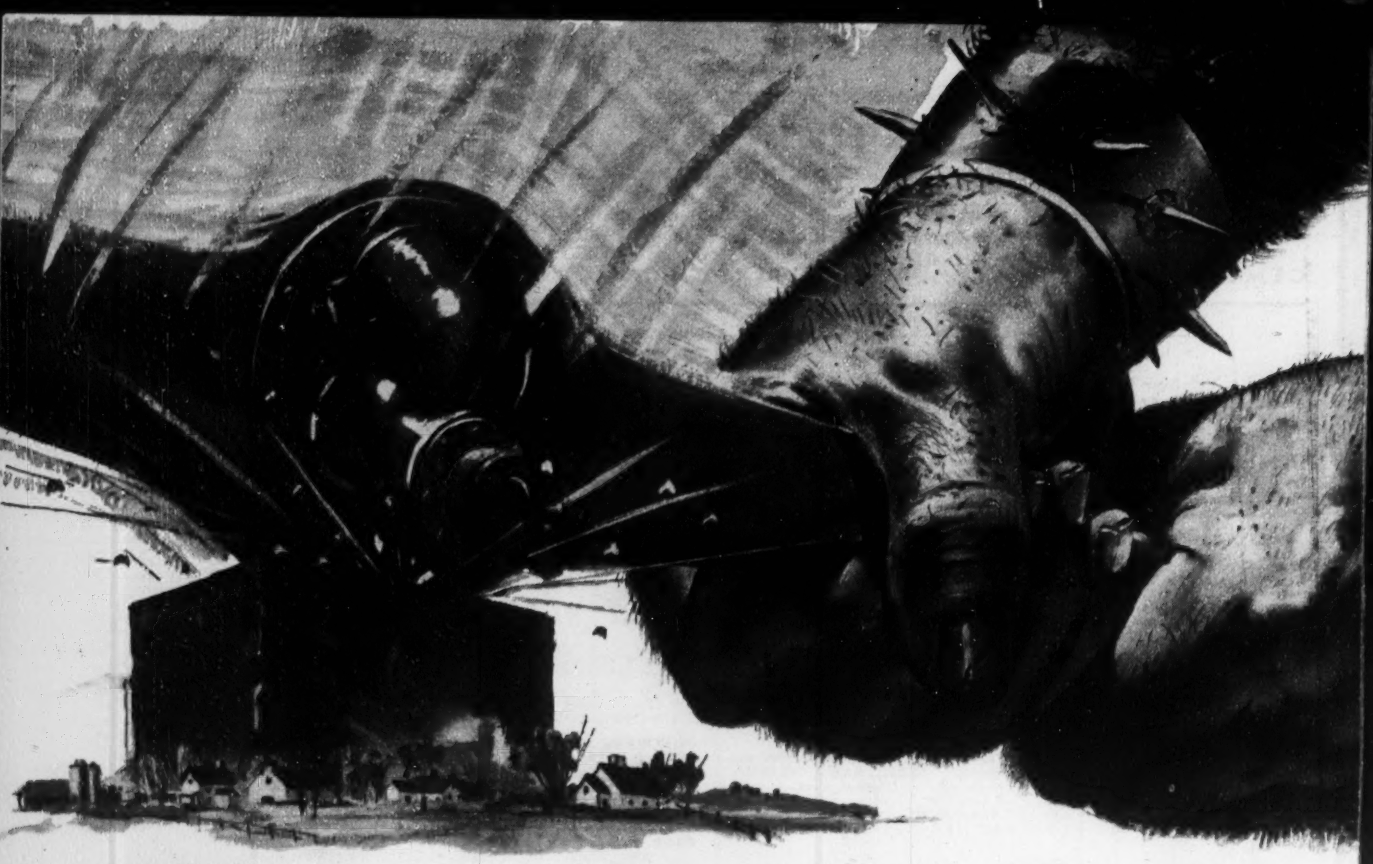
† *Prices to hold for third quarter of* 1954.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration		CUTBACK ASPHALT MC Per ton		ROAD OIL	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Per gal. Tank car	Tank car	Drums
Atlanta	$82.00	$41.00	$2.25	$26.00	$33.25	$0 215	$0.455	$0.095w	$0.185w	$0.105	$0.115	$0.225
Baltimore	150.00‡	75.00‡	.....	21.00i	.....	.0851i	0.175i	.09iw^{E}	.18iw^{E}	.09i	.095i	0.185i
Birmingham	.....	49.50i	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	22.00a	23.00a	22.00av	22.00av	.09^{F}	.....	.09a	.10a^{G}	.22a^{G}
Chicago	155.00‡	85.00‡	3.45/3.65‡j	19.85b	29.85b	18.85bv	28.85bv	.094bw^{H}	.1740bw^{H}	.0725b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	200.00	70.00d	5.03g	23.00^{A}	.....	23.00^{A}	.....	.1025^{A}w^{F}	.....	.....	.1025^{AG}	.18^{AG}
Dallas	e	40.00	e	24.05	43.09	.1016	.2103	28.91	50.44	.098	.1087	1960
Denver	.....	50.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	98.00	.....	27.21	.....	27.21v	.....	.1188w^{I}	.....	.0792	.....	.211
Kansas City	e	e	e	15.00cl	.....	.06	.....	.065*w^{J}	.....	.055c	0.10	.....
Los Angeles	e	.....	e	16.00dmx	.....	16.00dvx	.....	18.00dx^{K}	.....	17.00dv	.0825j	.1725j
Minneapolis	.....	.....	2.97h	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal	.....	e	e	27.00n	39.60n	.135n	.198n	16.50nu	20.90nu	.132n	.197ns	.239ns
New Orleans	.....	.....	.....	17.50e	....o	17.50ev	....o	.085ew	....o	.0825^{B}	.085^{BL}	.....
New York	.....	.....	2.75f	23.89q^{CD}	44.32q^{D}	22.89vt^{CD}	43.57vt^{D}	.1023*^{CDF}	.1889w^{DF}	.....	.1023^{CD}	.1918^{D}
Philadelphia	175.00	110.00	4.06	22.00	.....	.....	.....	.09u^{F}	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	38.00	.10	.21	27.00^{E}	40.00^{E}	.098	.11	.224
St. Louis	.....	.....	.....	18.55f	.....	.1713	.....	.0865w^{M}	.....	0.155	.10	.....
San Francisco	.....	55.00*	.....	17.50g	33.00gp	17.50gkv	33.00gkv	20.00g^{N}	37.50g^{N}	18.75v	.085y	.....
Seattle	.....	.....	.....	17.50h	38.00h	17.25hv	.....	24.50^{K}	.....	19.75hv	.085h	.095hv

‡ Delivered.
PAVING BRICK & BLOCK: *a* CL. *c* 2⅝ x 8¼ x 4. *d* LCL, truck deliveries. *e* Not used. *f* 2" interior 6# treat. *g* 3" *h* 2" int., 8# treat. *i* 3 x 3⅝ x 8½. *j* 2½", 6lb. tr.
ASPHALTS: *a* Price at plant, Everett, Mass *b* F.o.b. refinery Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *h* F.o.b. Martinez. *i* F.o.b. refinery, Baltimore. *j* F.o.b. refinery, Inglewood, Calif. *k* 50–110 penetr. *l* Less than 100 penetr. *m* 40/80 penetr. *n* Tax incl. *o* Drums not avail. Shipped in steel bbl. *q* 40/85 penetr. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 85/200 penetr. *u* Per 100 gal. * Per ton. *w* Per gal. *x* Also tank trucks *y* F.o.b. Oakland. ^{A} F.o.b. refinery, Cleveland. ^{B} F.o.b. Destrehan, La. ^{C} Bulk. ^{D} Prices based on transporting to Manhattan via truck. ^{E} RC. ^{F} Also RC. ^{G} Also MS, SS. ^{H} RC^{G} -5 incl. ^{I} MC 4. ^{J} MC, RC .0675. ^{K} MC 3, 4 & 5. ^{L} MS. ^{M} MC 1-5, RC 1-5, .089. ^{N} MC 3.

(Continued on p. 50)



We give truck axles a brutal

in the new Timken-Detroit indoor proving ground

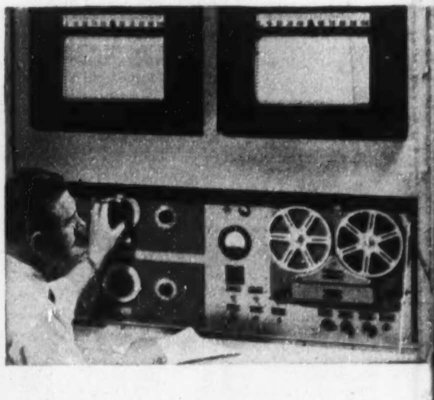
...and only Timken has it!

We smash, twist, jerk and over-load them. Match every imaginable hauling situation. Then add a few ruinous tricks of our own.

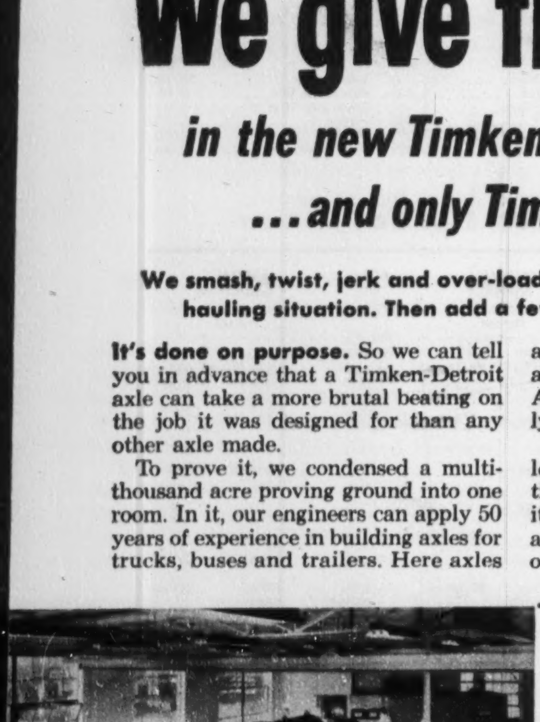
It's done on purpose. So we can tell you in advance that a Timken-Detroit axle can take a more brutal beating on the job it was designed for than any other axle made.

To prove it, we condensed a multi-thousand acre proving ground into one room. In it, our engineers can apply 50 years of experience in building axles for trucks, buses and trailers. Here axles and gearing are subjected *indoors* to any possible *outdoor* hauling condition. Axle performance is measured and analyzed under absolute scientific control!

As a result: you enjoy longer axle life; less maintenance, repairs and downtime; lower operating costs; fatter profits. No wonder Timken-Detroit axles are the choice of manufacturers and owners everywhere!

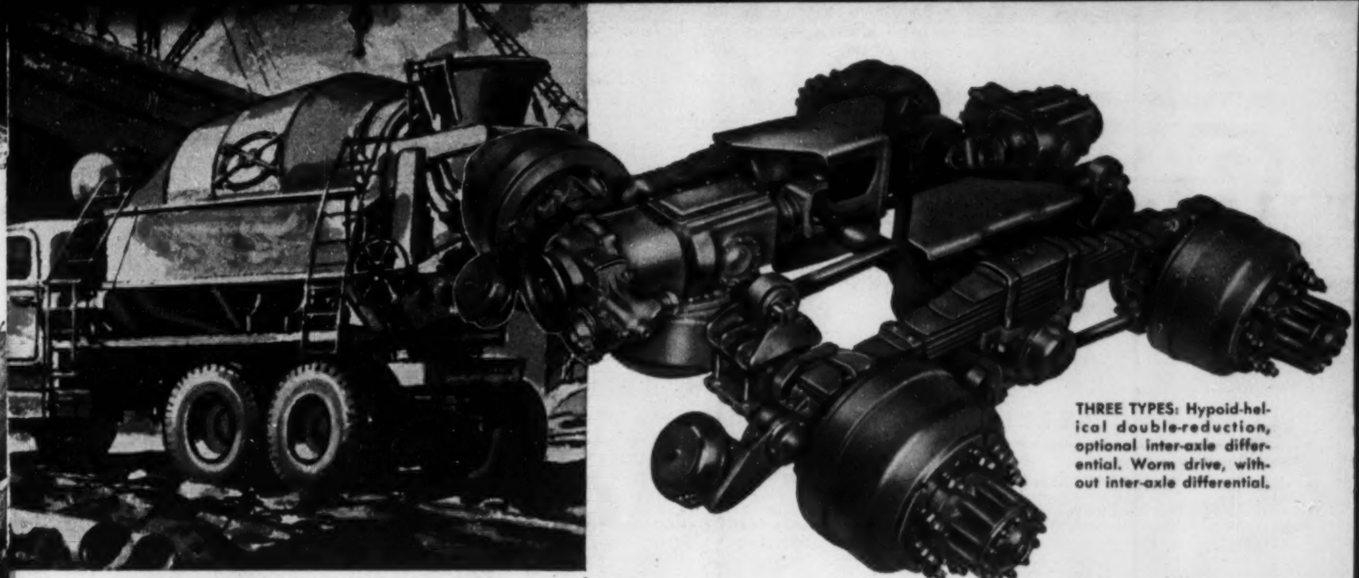


This is our "truck driver." He works in the "Torture Chamber." Above him are graphs showing speed and torque performance under any operating condition he chooses . . . soft ground at full load . . . mountains . . . express highways or side roads. With special dials, recorders and electronic devices, he actually *drives* the axle with scientific accuracy from his chair!



How TDA proves axle quality in this "Torture Chamber."

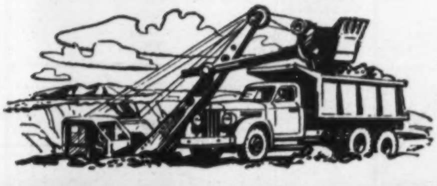
We take one of our axles and put it on the "block". . . . then duplicate the roughest hauling condition, hour after hour, day after day . . . such as simulating 500,000 miles of toughest driving in just a few days. Or we "dream up" a test like going up hill with a full load at 45 m.p.h. from California to New York—*non-stop*. There is no other axle testing like it in the world!



THREE TYPES: Hypoid-helical double-reduction, optional inter-axle differential. Worm drive, without inter-axle differential.

Hauling wet mix? You need Timken-Detroit axles—duplicates of axles that have been given the "works" in our indoor testing laboratory. Simulating the punishment the axle would get hitting a chuck hole with a capacity load every 4 seconds, 24 hours a day, month after month! And it's all done to save you money on maintenance and repairs—make you more money every load.

beating



TIMKEN *Detroit* AXLES

TIMKEN DETROIT AXLE DIVISION
ROCKWELL SPRING AND AXLE COMPANY
DETROIT 32, MICHIGAN

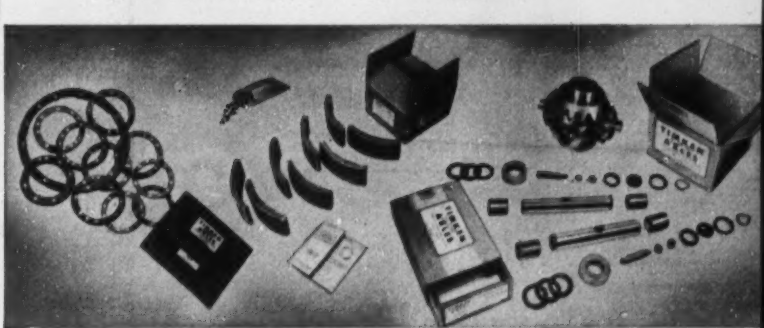
The Accepted T D A Co Standard
TRADE MARK REGISTERED

"TORTURE-TESTED"
to Save Money on the Job

WORLD'S LARGEST MANUFACTURERS OF AXLES FOR TRUCKS, BUSES AND TRAILERS

For six-wheeler operation . . . the TDA Tandem Drive Rear Axle Unit

Now—the *world's finest* tandem drive rear axle unit for heavy-duty motor trucks! And with these features, developed, introduced and pioneered by TDA: (1) Available in 3 types of final drives and 3 capacities. (2) Top-mounted straight-line final drive eliminates propeller shaft angularity. (3) Optional inter-axle differential . . . spur gear design, cab-controlled power-lockout. (4) Torsion flow axle shafts . . . guaranteed for 100,000 miles or three years, whichever occurs first. (5) Hot forged steel axle housing . . . guaranteed for the life of the vehicle. (6) Unit-mounted "P" series power brakes . . . for longer life, greater economy and efficiency. (7) Cradle ride spring suspension and paralleled torque rod system . . . maintain correct alignment and weight distribution regardless of driving and braking conditions. (8) Exclusive two-piece trunnion tube bracket speeds servicing. (9) Removable torque rod and spring guide brackets . . . for positive alignment, easier replacement. (10) Rubber torque rod bushings and rubber spring seat bushings . . . eliminate metal-to-metal contact. Require no lubrication.



Increase axle life with Genuine TDA Equipment Parts

Take no chances with ordinary replacement parts. For sure, dependable factory-type jobs, look to genuine Timken-Detroit axle parts kits—identical to your axles' original equipment.

Each kit is *complete*—gives you everything you need—in one handy package. Gaskets and shim parts, brake liners, steering knuckles, differential gears—for every size of brake and axle. Order by number from your dealer. Cut labor and adjustment costs. Get trucks back on the road quicker!

Plants at: Detroit, Michigan • Oshkosh, Wisconsin • Utica, New York • Ashtabula, Kenton and Newark, Ohio • New Castle, Pennsylvania

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	Light	Re-rolled	TRACK SUPPLIES Angle Bars	Std Spikes	Tie Plates	Track Bolts
Birmingham Area	$4.25	$4.225	$4.30	$8.90	....	$89.00	$107.00	Not	$5.425	$7.30	$5.275	....
Chicago Area	4.25	4.225	4.30	8.90	$5.075	89.00	107.00	avail-	5.425	7.30	5.275	....
Pittsburgh Area	4.25	4.225	4.30	8.90	5.075	89.00	107.00	able	5.425	7.30	5.275	$11.00
Buffalo Area	4.25	4.225	4.30	8.90	5.075	89.00	107.00	....	5.425	7.30	5.275	11.00
Cleveland	....	....	4.30	8.90	5.075	......	......	....	....	....	....	11.00
Youngstown Area	....	....	4.30	....	....	......	......	....	....	7.30	....	....
Geneva	4.25	4.225	....	....	....	......	......	....	....	....	....	....
Los Angeles	....	....	....	....	5.075	......	......	....	....	7.30	....	....
Pueblo	4.30	4.70	4.75	....	....	......	95.00	....	5.425	7.30	5.275	11.00

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	Rail steel	EXPANDED METAL LATHk Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	Std. ribbed 3.4 lb.
Atlanta	$7.31	$7.11s	$7.11s	$38.00‡	$42.00‡
Baltimore	7.02	7.06j	....	42.00	45.00
Birmingham	6.35	6.15t	6.15t	50.00p	55.00p
Boston	7.59a	7.37	7.37	39.00	43.50
Chicago	6.69	5.78gu	5.78gu	48.00‡	50.00‡
Cincinnati	7.06ak	6.91rv	....	40.50mn	44.50mn
Cleveland	7.02	5.76c	....	39.00‡	43.00‡
Dallas	9.05	7.25	7.25	49.00	52.00
Denver	8.15	7.20c	....	48.00n	59.00mn
Detroit	7.16	7.19dw	....	50.50	60.50
Kansas City	7.35a	7.57	....	45.00	50.50
Los Angeles	7.55fd	7.05	....	51.00	57.00
Minneapolis	7.15d	7.68b	7.68b	37.00	41.00
Montreal	7.25–8.00i^C/8.50–9.20^A	6.05i	6.05i	46.00h	51.00h
New Orleans	....	6.20akz	....	66.00	60.00
New York	7.48	6.85yaa	6.85yaa	38.50no	44.00no
Philadelphia	6.42	6.67	....	38.00‡	42.00‡
Pittsburgh	6.55	6.55x	6.55	37.60	39.60
St. Louis	7.09a	6.30c	6.30c	55.00l	56.00l
San Francisco	7.50	6.85j	....	41.50	47.50
Seattle	5.00e	6.55cj	....	51.00nr	57.00nr

Quantity extras, per cwt: under 100#, +$4; 100–399#, +$2; 400–999#, +85¢; 1000–1999#, +20¢; 2000–9999#, base price; 10,000–19,999#, −20¢; 20,000–39,999#, −40¢; 40,000# and up, −50¢

EXTRAS, per cwt—*Quantity: less than 700#, +50¢; 700–1499#, +25¢; 1500–7999#, +10¢ *Size†: #2 +$2.20; #3 +$1.10; #4 +80¢; #5 +62.5¢; #6, #7 +45¢; #8, #9, #10 +30¢ *Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job) *Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–500 tons, +50¢ but not over $4500; 20–200 tons, +60¢ but not over $2000; 5–20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70 *Design only: +60¢

WELDED FABRIC REINFORCING
Per 100 sq. ft., carload lots fob mill
4 × 16 in., No. 5 & 10 wires—Joliet, Ill., Donora, Pa., Monessen, Pa. $3.18
4 × 12 in., No. 8 & 12 wires—Joliet, Ill., Donora, Pa., Monessen, Pa. $2.08
6 × 6 in., No. 6 & 6 wires—Joliet, Ill., Donora, Pa., Monessen, Pa. $3.33

*‡ Delivered *a 2000–9999# *b 10,000–15,999#, fob city *c 20 tons or over *d 10,000–19,999# *e fob plant *f incl. delivering in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p del. of 500 sq. yd. or more *q 4# per sq. yd. *r 2% off for cash *s add 2.5¢ switch *t add 5¢ switch, 15¢ del. *u add 6.25¢ switch *v add 15¢ del. *w add 20¢ del. *x add 5¢ switch *y add 30¢ del. *z add 10¢ del. *aa Dropping of listing charges causes decline this month. Prices beginning Aug. 1 based on Morrisville, Pa.; previously based on Sparrow Pt., Md. Decrease in freight costs due to switch in mill base offset mill price rise July '54. *A American made *C Canadian made † Number system replaces inch system of classifying bar sizes. New system is based on number of eighth inches in diameter of bar.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.a	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13–44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4–24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14–41 12 in.	24 in.
Atlanta	$101.00	$1.45	$2.42	$ .545	$1.27	$4.82	$12.925	$248.00	$356.00	$0.90m	$3.40m
Baltimore	121.50	1.45	2.42	.546	1.053	4.275s	11.3775	178.20	274.80	.95	2.60
Birmingham	103.00	1.45	2.42	.42	.75	2.99	....	250.00‡	375.00‡	1.25m	2.75m
Boston	122.00	1.47	2.20	.581qrt	1.1205qrt	4.635qrt	12.1975qrt	187.80r	289.20r	1.62mg	3.95mg
Chicago	107.00	1.45	2.20	.70m	1.35m	5.62m	13.50m	150.00‡	270.00‡	.80	2.80
Cincinnati	106.00	1.47	2.20	.581t	1.120t	4.64t	12.20t	225.00	350.00	.80m	2.95m
Cleveland	108.00	1.47	2.29	.49s	.945s	3.96s	10.66s	158.00m	245.65m	.85m	3.25m
Dallas	112.00	1.47	2.54	.439	.799	4.00b	9.17b	......	......	.49	1.60
Denver	115.00	1.53	2.54	.45n	.78n	3.48n	....	......	......	.74m	2.50m
Detroit	108.00	1.47	2.29	.75	1.45	5.75	15.50	230.00m	350.00m	.86	3.47
Kansas City	113.00	1.47	2.29	.53	.945	3.87	10.60	250.00	480.00	.80	3.25g
Los Angeles	129.65	1.53	2.29	.67l	1.46l	5.97l	14.89l	228.20l	348.90l	.95	2.75f
Minneapolisw	112.00	1.40	2.42	.75mo	1.36mo	5.60mo	....	......	......	1.42h	4.05h
Montreal	110.00	....	....	1.07u	1.73u	5.52u	8.93u	......	......	1.17h	3.11j
New Orleans	101.50	1.45	2.42	.483	.87	4.69	....	280.00p	460.00p	.65	2.29
New York	111.35	1.47	2.20	.66	1.28	5.08	13.42	......	......	1.15	3.00
Philadelphia	110.00	1.45	2.20	.65	1.25	4.95v	12.65v	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	110.00	1.47	2.20	.468m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St. Louis	112.00	1.45	2.29	.56	1.03	4.22	9.80	180.00l	380.00l	1.20dl	2.85dl
San Francisco	127.00	1.53	2.29	.61d	1.41d	5.78d	14.32d	235.00l	392.00l	1.05n	3.30n
Seattle	122.00	1.54	2.42	.51b	.91b	....	....	150.00e	......	.85k	2.75k

*WROUGHT STEEL PIPE
(Full standard weight)
Discount from list; see footnote

Mill	2½ & 3 in. Butt Weld† Black %	Galv. %	3½ to 6 in. Lap Weld† Black %	Galv. %
Lorain, Ohio	34.25	18.00	....	....
Aliquippa, Pa.	34.25	20.50	22.50a	11.25a
Sparrows Pt., Md.	32.25	16.00	20.50a	3.75
Benwood, W. Va.	34.25	18.00	24.25d	7.50d
Youngstown, O.	34.25	18.00	....	....
Indiana Harbor, Ind.	33.25	17.00	24.50ab	7.75a
Sharon, Pa.	34.25	18.00	....	....
Wheatland, Pa.	34.25	18.00	25.50a	8.75a
Etna, Pa.	34.25b	18.00	24.25d	10.00d
Fontana, Calif.	31.25b	7.50b	12.50ab	+1.75ab

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in. d 6 in.

*‡ Delivered *a Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. *b Extra strength ASTM C 200–44T *c 4-in., $90 *d SS361-A *e 30-in. *f 21 in. *g culvert pipe; reinforced, ASTM C 76–41 *h reinforced, ASTM C 75–41 *i reinforced, ASTM C 76–37 *j centrispun; no standard specs. in Canada *k 2% off for cash *l fob plant *m truck delivery *n LCL delivered, fob truck *o listed price based on LCL (no min.) *p freight allowed to destination in city *q ASTM C 13–40 *r CL fob origin, freight allowed *s 2 ft lengths *t 3 ft lengths *u CESA A 60–1941 specs. used *v standard strength *w 6 in., $1.67 per ft., Class 150, CL, fob track

* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (based on approx. $200 per net ton): *Butt Weld* ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld* 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: *Butt Weld* — 1 in. black, + 32.75, galv. + 61.0; 1¼ in. black, + 32.75, galv. +60.50, 1½ in. black, + 29.25 galv. + 56.75; *Lap Weld* — 2½ in. to 3 in. black + 33.50 galv. + 59.5; 4½ in. to 6 in. black + 30.50 galv. + 54.75. Add freight rates plus 3% transportation tax to get destination price.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

	SHORT LEAF YELLOW PINE AND DOUGLAS FIR. All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face) *All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1 Lengths up to 20 ft. (Prices in italics)*									LONG LEAF Y. P. Merchantable grade up to 20 ft.		PLYWOOD Rail freight increment (See note for base price)	
	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	2x12 Rgh	12x12 Rgh	5/8"	3/4"
Atlanta †	**$77.00**	**$80.00**	**$73.50**	**$74.00**	**$77.50**	**$81.00**	**$79.00**	......	......	......	......	$22.32	$27.24
Baltimore *	**89.00**	**94.00**	**82.00**	**87.00**	**90.00**	**97.00**	**102.00**	......	......	**$160.00**	**$170.00**	25.92	31.60
	120.00g	*120.00g*	*120.00g*	*120.00g*	*120.00g*	*120.00g*	*120.00g*	*$135.00*	*$135.00*				
Birmingham †	**75.50**	**77.50**	**70.50**	**80.50**	**82.50**	**85.50**	**95.50**	......	......	**115.50**	**155.50**	21.78	26.58
	105.00	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*				
Boston *	**95/103a**	**100/112a**	**90/102a**	**93/107a**	**100/112a**	**104/114a**	......	......	......	......	......	25.92	31.60
1	*80.00n*	*80.00n*	*111.00*	*111.00*	*111.00*	*111.00*	*115.00*	*116.00*	*116.00*				
Chicago **	**98/99**	**101/102**	**88.00**	**106.00**	**112.00**	**115.00**	**112.00**	......	......	**139.00**	**139.00**	22.45	27.37
	103/105	*103/105*	*111.00*	*110.00*	*112.00*	*112/114*	*120.00*	*120.00*	*120.00*				
Cincinnati *	**86.50**	**92.00**	**78.50**	**85.50**	**92.00**	**104.25**	**107.25**	......	......	**128.00**	**128.00**	25.00	30.48
	96.50	*93.25*	**105 25**	*104.50*	*105.50*	*104.50*	*130.25*	*130.25*	*130.25*				
Cleveland **	**88.00**	**90.00**	**85.00**	**93.00**	**93.00**	**94.00**	......	......	......	......	......	25.37	30.93
	......	......	*104.00*	*105.00*	*105.00*	*105.00*	*119.50*	*119.50*	*119.50*				
Dallas k†	**70.00**	**80.00**	**68.00**	**68.00**	**63.00**	**65.00**	**130.00**	......	......	**125.00**	**128.00**	18.72	22.80
Denver *	*Not in stock*		*118.00*	*118.00*	*118.00*	*119.00*	*125.00*	*135.00*	*140.00*	......	......	13.92	16.98
Detroit ‡	**112.00**	**116.00**	**105.00**	**112.00**	**118.00**	**118.00**	......	......	......	......	......	25.00	30.48
	98.50	*101.50*	*104.50*	*104.50*	*104.50*	*105.50*	*115.50*	*117.00*	*117.00*				
Kansas City *	**110.00**	**110.00**	**110.00**	**110.00**	**110.00**	......	......	......	......	......	......	16.56	20.16
	122.00	*122.00*	*125.00*	*125.00*	*125.00*	*132.00*	*170.00*	*170.00*	*170.00*				
Los Angeles 1	*95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*123.00*	*128.00*	*123.00*	......	......	16.61ab	20.25ab
Minneapolis #	*145.00*	*145.00*	*145.00*	*145.00*	*145.00*	*145.00*	*165.00*	*165.00*	*165.00*	......	......	19.80	24.25
Montreal ab	**88.00**	**97.00**	**88.00**	**88.00**	**100.00**	......	......	......	......	......	......	.....	.....
	110.00	*110.00*	*110.00*	*110.00*	*110.00*	*118.00*	*105.00*	*105.00*	*105.00*				
New Orleans †	**100.00**	**100.00**	**92.50**	**85.00**	**90.00**	**94.00**	**118.00**	......	......	**150.00**	**148.00**	18.72	22.80
†	*106.50*	*106.50*	*123.50*	*116.50*	*116.50*	*116.50*	*115.00*	*122.00*	*122.00*				
New York 2	**110.00**	**113.00**	**115/118**	**120/125**	**120/125**	**125/130**	**155/165**	......	......	**225.255**	**225/255**	25.92	31.60
			Range from $120.00 to $125.00				*140/155*	*150/160*	*150/160*				
New York 4 **	**80.00**	**82.00**	**69.00**	**81.00**	**84.00**	**85.00**	**115.00**	......	......	**190.00**	**190.00**	.....	.....
	88.00	*89.00*	*95.00*	*94.00*	*95.00*	*95.00*	*106.00*	*115.00*	*115.00*				
Philadelphia ‡		**Range from $110 00 to $127 00**				**110/127**	**110/127**	......	......	**210/220**	**210/220**	25.92	31.60
		Range from $128.00 to $165.00				*125/132*	*135/155*	*150.00*	*150.00*				
Pittsburgh †		**Range from $95 00 to $100 00**					**125.00**	......	......	**125.00**	**135.00**	25.92	31.60
	125.00	*125.00*	*125.00*	*125.00*	*125.00*	*125.00*	*140.00*	*160.00*	*160.00*				
St. Louis #v	**104.50e**	**106.50e**	**101.00d**	**113.00d**	**123.00e**	**132.00**	......	......	......	......	......	18.72	22.80
	......	......	*115.50d*	*124.50e*	*124.50e*	*126.50e*	*172.00e*	*165.00*	*177.00*				
San Francisco A†	*65.00*	*66.00*	*70.00*	*70.00*	*70.00*	*71.00*	*70.00*	*70.00*	*70.00*	......	......	12.22	14.91a
Seattle †	*82.50*	*82.50*	*82.50*	*82.50*	*82.50*	*82.50*	*92.50*	*92.50*	*92.50*	......	......	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd: 4. Not avail as we go to press.

LUMBER: **Bold Face type, Southern Pine.** *Italics, Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8–12 ft. lengths. *e* 8–16 ft. lengths. *g* No. 1 common. *i* 8 ft. lengths. *k* No. 3 common. *n* #3. *A* Rail freight rate from North west mills to San Francisco are $11.50 to $15.00 per M ft bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock.

For rough, add $3.00 to above figures.

PLYWOOD: Plyform grade Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on 5/8", $169.00; on 3/4", $191.00. Exterior plyform 5/8" $189.00, 3/4" $213.00. For other centers add rail freight increment from table on proper size Oiling and edge sealing charges included. *a* Lower rate by water shipment *b* 50,000 lb. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS. Discounts from jobbers list, Feb. 1, 1956a. Single or Double Thickness		EXPLOSIVES. Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
	A quality	B quality	
Atlanta	79%	80%	$0.2365
Baltimore	78%d	80%d	.2365
Birmingham	83%	83%	.1840
Boston	77-10%	77-10%	.2365
Chicago	76%	76%	.2365
Cincinnati	76%	76%	.2365
Cleveland	76-10-10%	76-10-10%	.2765
Dallas	75%	75%	.2440
Denver	79%	79%	.2415
Detroit	78-10-10%	78-10-10%	.2365
Kansas City	80-10%	80-10%	.2415
Los Angeles	73%	78%	.2390
Minneapolis	75-10%	75-10%	.2415
Montreal	40-5%bc	40-10-5%b	21.35h
New Orleans	78%	79%	.2415
New York	80-10%	80-10%	.3975g
Philadelphia	78%	80%	.2365
Pittsburgh	80%	80%	.2090
St. Louis	80-10%	80-10%	.2415
San Francisco	70%	70%	.2365
Seattle	73%	76%	.2390

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U.S.; $1.75 per 100 lbs. higher in Canada.

Glass; *a* Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b* Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness. *d* Discount 6/15/52.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h* F.o.b. Beloeil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.10.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.184	$0.2165	$0.2365
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.189 -.1965	.2215-.229	.2415-.249
Rocky Mtn. States	.189 -.2015	.2215-.229	.2415-.254
Pacific N. W. States	.1865-.199	.219 - 2315	.239 -.2515
Pacific S. W. States	.184 -.1915	.2165-.219	.2365-.2415

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.— 2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.— 2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.— 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt	6-in.	50 to 69-ft.	.50/.68	....
14-in.— 2-ft. from butt	6-in.	70 to 79-ft.	.78/.83	.93
14-in.— 2-ft. from butt	5-in.	80 to 85-ft.	.83/.93	.94
14-in.— 2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.— 2-ft. from butt	5-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots;		6"x8"x8'		7"x9"x8'6"	
		Untr.	Tr.	Untr.	Tr.
Boston	Oak i	....	....	....	....
	Pine	....	....	....	....
New York	S. L. Sap Pine	$2.00	$4.00	$3.00	$5.00
	Mixed Oak	2.50	4.50	3.50	5.50
Birmingham	Hardwood:	2.40	3.88a	2.85	4.58a
Chicago	Red Oak	....	3.20a	....	4.10/4.20a
Los Angeles	Douglas Fir	...	....	....	....
	Redwood:	....	....	....	....
Philadelphia	Red Oak	2.55	3.90	3.45	5.10
St. Louis	White Oak	2.05	....	2.35	....
	Red Oak	1.95	2.55a	2.25	2.90a
	Sap Pine or Cypress	....	2.40a	....	2.75a
San Francisco	Douglas Fir	2.08e f	3.08af	2.73bf	3.93caf
Montreal	Birch or Maple	....h	....h	....h	....h

Tr.— Treated; Untr.— Untreated. *a* Creosoted. *b* 7" x 9" x 8'. *c* Empty cell. *e* Green. *f* F.o.b. cars. *h* No constant price available. *i* Not available.

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb i	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.095
Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton	27.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.30
Soda ash, 58%, in paper bags, per 100 lb. dense	1.70
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.85
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works i	10.35

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED			STRUCTURAL CLAY TILE — LOAD BEARING — SCORED			BRICK		LIME		
	Per M. lots of 2,000 pieces or over,			Per M. lots of 2,000 pieces or over,			Per M. in quantity		Per ton, in paper, Carload lot,		
	3x12x12 in.	4x12x12 in.	8x12x12 in.	8x12x12 in.	10x12x12 in.	12x12x12 in.	Common backing	Straight hard	Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	$195.00	$207.00	$247.00	$327.00	$342.00	$381.00	$27.38	$27.38	$19.00	$17.50	$.....
Baltimore	186.00	198.35	372.00	421.50	549.00	627.00	36.00*k*	41.00*k*	32.00	21.50	.....
Birmingham	126.00*p*	136.00*p*	......	284.00*p*	......	......	26.50*ff*	32.00*gg*	29.25	24.00	.....
Boston	196.00†	209.00†	392.00†	283.25†	......	......	36.85*p*	39.85*p*	30.00†	28.00†	.....
Chicago	135.00	145.00	280.00	......	......	......	26.00	28.00	30.80	26.00	.....
Cincinnati	185.00*j*	195.00*j*	260.00*jdd*	......	......	......	45.00*j*	46.00*j*	26.00*j*	26.00*j*	.....
Cleveland	170.00**	181.00**	......	......	......	......	34.50	34.50	28.25	23.25	32.00*ee*
Dallas	......	118.00	......	......	......	......	19.75	32.25	32.00	21.80	.....
Denver	......	......	......	......	......	......	34.00	41.00	34.80*bb*	28.00*bb*	34.00*bb*
Detroit	130.00	138.00	259.00	......	315.00	360.00	37.75*cc*	38.50*cc*	34.00	30.00	.....
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	28.50	.....	32.00	26.00	28.50
Los Angeles	*r*	*r*	*r*	*r*	*r*	*r*	27.50§	.....	34.00	34.00	35.00
Minneapolis	175.00*p*	196.00*p*	407.00*p*	196.00*p*	......	......	35.00*vp*	45.00	40.00*bbe*	30.00*bbe*	42.00*bbde*
Montreal	165.00*aq*	181.00*au*	325.00*au*	230.00	248.00*e*	......	39.50	46.00	34.80	22.00	13.75*u*
New Orleans	170.00	170.00	310.00	380.00	......	......	31.00	.....	.....	28.00	28.00
New York	147.30*h*	157.10*h*	216.00*ch*	238.10*hn*	......	......	40.00	.....	36.00	32.00	.....
Philadelphia	145.30	155.00	290.60	348.70	......	......	30/34	35/42	25.00	23.00	2.97
Pittsburgh	138.00	151.00	260.00	228.00	297.00	341.00	36.00	46.00*y*	25.00	23.00	2.97*m*
St. Louis	147.00*cc*	168.50*cc*	338.25*cc*	465.00*cc*	439.00	621.50	40.00*sl*	38.50*s*	.90*saa*	.75*saa*	1.25*aaspee*
San Francisco	156.85*a**	177.10*a**	235.30*dda**	......	......	......	37.00	.....	26.60	26.60	2.65*m*
Seattle	223.00*se*	230.00*ce*	......	240.00*ecw*	......	......	34.00*s*	49.00*s*	42.00*shh*	37.50	3.90*mhh*

† F.o.b. yard Roxbury. *a* Smooth. *b* Per 50 lb. bags. *c* 6 x 12 x 12 in.-3 cell. *d* Pulverised hot. *e* 5%, 10th following month. *g* 5½ x 8 x 12. *h* F.o.b. trucks, job site N.Y.C. *j* Truck load or over. *k* $1.00 discount *l* Red face. *m* Per bbl., 180 lb. *n* 7½ x 7½ x 12. Speed title. *p* Truck lots. *q* **Provincial and Municipal tax extra.** *r* Not used because of earthquake danger. *s* **2%** discount for cash. *t* 5½ x 8 x 11½. *u* Tax exempt. *v* Sand lime. *w* 5 x 8 x 12. *y* Stacked. *z* Pebble lime price per 80 lb. sack. *aa* Price per sack. Lime not sold per ton. *bb* LCL. *cc* Truck delivery. *dd* 6 x 12 x 12. *ee* Pebble lime. *ff* 80% common. *gg* Select. *hh* LCL. § F.o.b. yard. ** Warehouse delivery. * F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD	WHITE LEAD	READY-MIXED PAINT			ROOFING SUPPLIES; Carload lots f.o.b. factory				
	Per 100 lb. in 600-lb. (Approx.) bbl. Dry *a*	Per 100 lb. in 100 lb. cases in oil *w*	Per gal., drums Graphite *b*	Aluminum *c*	Ferric Oxide *d*	Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 300 lb. bbl. per ton
Atlanta	$17.00	$28.275	$3.26	$3.51	$3.01	$2.74	$3.01	$2.98	$0.405	$39.75
Baltimore	16.75	27.90	2.75	4.25	3.35	2.66	4.43	4.43	.47	45.00
Birmingham	17.00	28.275	3.90	3.40	....	2.93	2.93	2.93	....	42.00*ee*
Boston	16.75	27.90	....	....	....	2.79*gg*	2.66*og*	2.66*og*	.42*g*	48.50*g*
Chicago	16.75	27.90	....	....	....	2.74‡*u*	2.74‡*o*	2.74‡*o*	38.00‡*bbr*	48.00‡
Cincinnati	16.75	27.90	....	....	....	2.50	2.585	2.585	.46*y*	47.86
Cleveland	16.75	27.90	2.47*pgg*	2.59*gg*	2.72*gg*	2.50*q*	2.35*o*	2.35*o*	.38*y*	40.70*hh*
Dallas	17.00	28.65	....	4.05	....	3.50*q*	3.75*o*	4.35*o*	.36	58.50*hh*
Denver	17.25	28.40	3.29	5.15	3.04	2.50	2.25*o*	2.35*o*	.43*ff*	45.00
Detroit	16.75	27.90	2.35	3.25	2.50	2.79	2.35*f*	2 35	.50	44.00
Kansas City	16.75	28.65	....	2.71*ys*	2.65	3.32	2.84*o*	2.84*o*	.53	57.00
Los Angeles	16.75	28.15	3.30*	4.50*	4.20*	2.63*	1.70*e**	*l*	.58*	*l*
Minneapolis	16.75	29.88/28.02	....	....	....	2.50*idd*	2.35*hidd*	2.35*hidd*	.38*idd*	42.00*r*
Montreal	.....	20.95	3.95*DE*	4.05*E*	3.25*FE*	4.00*t*	3.65*tf*	3.65*t*	1.06*bt*	3.30*kt*
New York	16.75	27.90	....	....	....	2.50#	2.35#*o*	2.35#*o*	.42#*z*	42.00*
Philadelphia	16.75	27.90	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	16.75	27.90	2.65	2.85	3.15	2.75	2.50*o*	2.50*o*	.38	45.00
St. Louis	16.75	27.90	....	....	....	2.50	2.35*h*	2.38*h*	.38*y*	48.45
San Francisco	16.75	28.15	2.40	....	3.40	2.95	4.00*aa*	....	.49	.....
Seattle	16.75	28.40	3.07*mcc*	2.93*mcc*	....	3.58*mocc*	3.05*hmcc*	....	.59*mcc*	52.00*mcc*

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. *a* Red lead prices change frequently due to pig lead price changes. *b* U. S. War Dept. Spec. 3-49A. *c* ASTM Spec. D266–31. *d* 80% minimum ferric oxide. *e* 15 lb. *f* **Per 432 sq. ft.** *g* F.o.b. yard, Roxbury. *h* Per roll. 65 lb. *i* Net carload lot prices; Minneapolis and vicinity. *k* Per cwt. *l* Not used. *m* 1% discount for cash. *n* F.o.b. city. *o* Per 60-lb. *p* 6-drum, 50 gal. ea. *q* Per 90-lb. roll. *r* **F.o.b. factory,** Chicago. *s* 466 Med. *t* Federal tax included. *u* Per 90 lb. square. *v* Per ton. *w* Price to large paint contractors is $1.25 less *x* Mineral surfaced. *y* 55-gallon container. *z* Drums. *aa* Approximate cost per 100 lbs. *bb* Roofers coating and cement; Price per ton. *cc* LCL, truck delivery. *dd* 2% cash discount. *ee* Asphalt pitch in 100 lb. package. *ff* 5-gal. drums. *gg* F.o.b. factory. *hh* Incl. freight. *D.* Std Black. *E.* Ready-mixed. *F.* Over 80% ferric oxide. * Aver. wt. approx. 425 to 550 lbs. drum. # Freight allowed to destination not exceeding .50 cwt.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$3.10	$2.50	$2.85	$2.60	$2.90	$2.75	$2.90	$1.33	$1.33
Baltimore	3.20d	2.75	3.275i	3.10/3.25	3.075i	2.975	2.975j	1.675i	1.675i
Birmingham	3.15	2.40	2.825h	2.245	2.62	3.00	2.95h	1.30	1.40
Boston	3.185e	2.75	3.15i	3.20	3.30f	3.13H	3.10d	2.14Y	2.14Y
Chicago	3.55k	3.30r	3.35m	3.15w	3.625g	3.53f	3.39e	2.50h	2.50h
Cincinnati	3.325	3.075	3.115h	28.5/3.10	3.10	3.28N	3.335V	2.12	2.02
Cleveland	3.325i	3.275#	3.275i	3.275	3.275	3.275	3.28e	2.525	2.525
Dallas	3.50	2.75	2.875	2.75	3.437	3.10	3.00	1.45	1.45
Denver	3.50	2.85	2.85	2.78	3.30	3.00	3.05	1.875	1.875
Detroit	3.45ve	3.21v X	3.33e	3.20v	3.49dl	3.52H	3.125h	2.45e	2.45e
Kansas City	3.625	2.75	2.90	2.725/2.97	3.25	2.987O	3.075h	2.03	2.03
Los Angeles	3.40	2.825m	3.025h	2.72d	3.437B	3.20	3.35e	2.15i	2.15i
Minneapolis	3.225	2.80	2.92	2.75	3.00	3.15n	3.00	2.05	2.05
New Orleans	3.10	2.47	2.85m	2.65	2.675	3.00h	3.00e	1.425	1.425
New York	4.15br	3.57hJ	3.975p	3.84J	4.15A	3.63asF	3.815hL	2.415J	2.415J
Philadelphia	3.92i	3.20	3.51tM	2.975/3.72e	3.625S	3.65tu	3.515g	1.95	2.25
Pittsburgh	3.625h	3.20h	3.225h	3.35h	3.30h	3.50	3.30	2.10h	2.10h
St. Louis	3.62c	3.125A	3.10h	3.20h	3.25h	3.50c	3.39R	2.175h	2.175h
San Francisco	3.65be	2.98h	3.075hw	2.835	3.50ah	3.30 U	3.35K	2.15h	2.15h
Seattle	3.40d	2.75d	2.95d	2.78	3.25d	3.06 X	3.26T	2.35d	2.35d
Montreal*†	2.00	1.80	1.90	1.70	2.00	1.90	1.90	1.25	1.40

*** Cost of living bonus now included in basic wage.** # Includes 5¢/hr tool replacement. **† Plus 2%** vacation pay.

a 6 hr. day. **b 7 hr. day.** c Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF d Incl. 10¢ H&WF. e Incl. 10¢ VF. f Incl. 6% WF. g Incl. 11½¢ WF h $2.725 homes & housing plus 7½¢ WF. i Incl. 17¢ WF j Incl. 10½¢/hr. WF. k Incl. 7½¢/hr. WF. l Incl. 4% VF. m Incl. 5¢/hr WF. n Incl. 25¢ H, W, Ins., Vac. & Retirement. o Incl. 10¢ PF, 7¢ WF. p Incl. 3% WF, 3% PF. r Incl. 4% WF and 20¢ PF. s Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. t Incl. 7½¢ H&WF. u Incl. 1½% PF. v Incl. 10¢ WF. w Negotiating. x Incl. 8¢ WF. y Incl. 22½¢ WF. z Incl. 7½¢ IF, 5¢ H&WF. A Incl. 15¢ WF, 15¢ PF & 20¢ B.F. B Incl. 3% WF. C Incl. 2½¢ H&WF. E Plus 6% WF, plus travel pay per day. F Plus $4/per day Annuity contrib. H Incl. 7¢ WF, 6% VF. I Incl. 15¢ H&WF. J Incl. 5% WF. 6PH. K Incl. 10¢ WF, 12½¢ VF, 7½¢ PF. L Incl. 3% WF, 3% PF, 2% VF, 1% EF. M Incl. 7½¢ PF. N Incl. 1% WF. O Incl. 2% WF, 1% PF. R Incl. 12¢ WF and 1¢ apprentice. S Incl. 12½¢ H and WF. T Incl. 21¢ H, W & VF. U Incl. 7½¢ WF, 4% VF, 1% PF. V Incl. 8½¢ WF. W Incl. 2% VF. X Incl. 6¢ VF. Y Incl. 7¢ H & WF.

MEXICO CITY PRICES

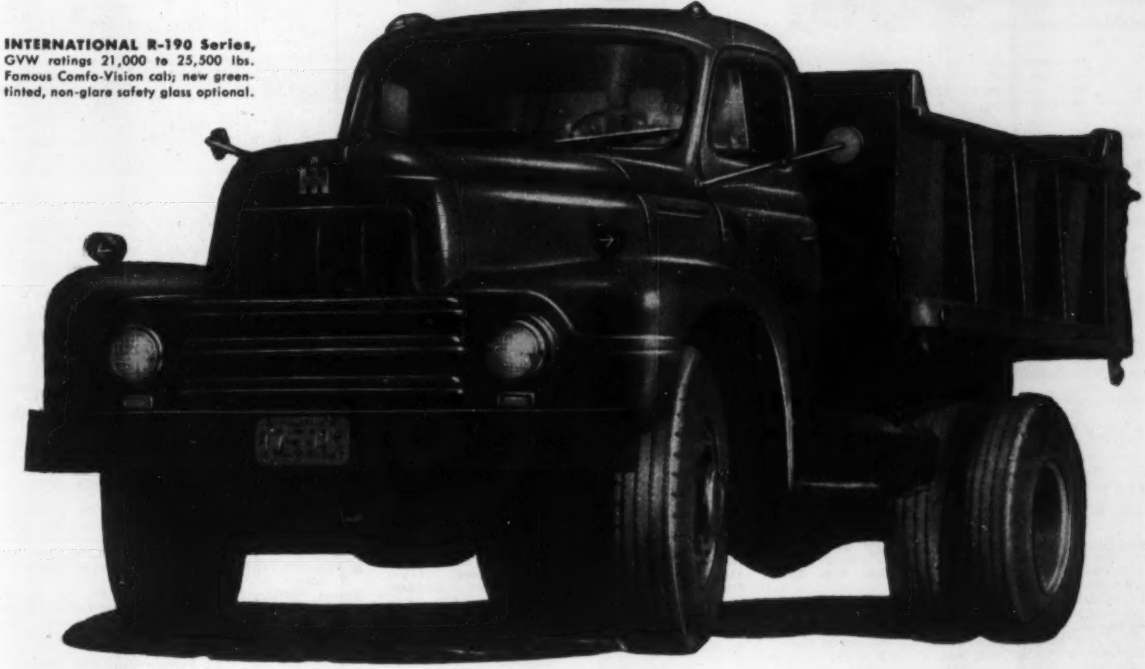
In Pesos, F.o.b. City		July '54	Aug '54
Common Wages—Building (8 hr. day) (Peons).......	av. per hr.	1.19	1.19
Common Wages—Heavy Const. (8 hr. day) (Peons).	av. per hr.	1.19	1.19
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.73	2.73
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.73	2.73
Struct. Iron Workers (8 hr. day).....Remachadores.	av. per hr.	1.37*	1.37*
Struct. Steel Shapes			
3"–15" x 12 meters.....	per metric ton	1428.62	1428.62
Reinf. Steel, Corr. Rods			
¼" x 11 meters.............	per ton	1490.00	1490.00
⅜" x 11 meters.............	per ton	1490.00	1490.00
½" x 11 meters.............	per ton	1490.00	1490.00
⅝" x 11 meters.............	per ton	1490.00	1490.00
¾" x 11 meters.............	per ton	1490.00	1490.00
1" x 11 meters.............	per ton	1490.00	1490.00
Gravel truck load of 3½ cu. meters			
Blue Gravel...............	per tr. load	60.00	69.00
Rose Gravel...............	per tr. load	62.00	62.00
Cement, Std. Port, (Tolteca)	per ton	160.00	160.00
Lumber			
3rd Class Pine#...........	per M ft.	850.00	850.00
1st Class Pine............	per M ft.	1500.00	1500.00
2nd Class Pine............	per M ft.	1300.00	1300.00

* **Up to 10*th*** floor. Succeeding floors slightly higher.

Substitute for OYAMEL now restricted.

ENR Skilled Average: (Bricklayers, Carpenters, Iron workers): $3.166 **ENR Common Average: $2.016.**

RIGHT on the job 22 straight years!



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170 basic models from ½-ton pickups to 90,000 lbs. GVW off-highway models . . . including six-wheel, four-wheel drive, cab-forward, and multi-stop delivery types . . . 29 engines from 100 to 356 hp., with widest choice of gasoline, LPG, or diesel power . . . wheelbases, transmissions, and axle ratios for any need . . . wide selection of bodies and equipment . . . thousands of variations for exact job specialization.

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INTERNATIONAL TRUCKS

Standard of the Highway

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† N. H., **Portsmouth**—RETURN LINES—BA 9/16—P. Wks. Office, First Naval Dist., 495 Summer St., Boston 10, Mass. replacing condensate return lines, Naval Reserve Training Center, NOY 85266, Spec. 43310 (SF).

BIDS ASKED—BUILDINGS

R. I., **Westerly**—SCHOOL—BA 9/17—Town, C. E. Mason, supt. Schools, Westerly High School, Westerly, elementary school, off Tower St. $500,000. Plans deposit $25. Extended date. Harriman, Willis & Hayden, 810 Park Square Bldg., Boston, Mass., archts. CD 8/26.

R. I., **Westerly**—SCHOOL—BA 9/17—Town, C. E. Mason, supt. Schools, High School, Westerly, elementery school, Westminster St., facing State St. $500,000. Plans deposit $25. Harriman, Willis & Hayden, 810 Park Square Bldg., Boston, Mass., archts. CD 8/26.

† Mass., **Ayer**—SERVICE CLUB—BA On Or About 9/23—U. S. Eng., 5857 Commonwealth Ave., Boston 15, Mass., service club, Fort Devens, ENG-19-016-55-20. $275,000-$325,000. CD 12/3/52.

Conn., **Stamford**—SCHOOL—BA 9/23—City Bd. Educ., Supt. Schools, 151 Broad St., Springdale School Addn. $615,000. Plans deposit $30. Edward F. O'Dwyer, 58 E. State St., Westport, archt.

▲† Mass., **Ayer**—BARRACKS—BA On Or About 10/10—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., two U. S. Army Barracks, One Company Type A, Fort Devens, ENG-19-016-55-21. $1,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta,
Farrin Bros. & Smith, Brighton, Me., CA, **$183,076,** b. conc. 2.91 mi. Fed. Aid Secondary Proj. S 0188 (1), Section 2, Wayne-Winthrop. Bids Aug. 25. CD 8/23.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Baker & Co., Inc., 3475 Washington St., Jamaica Plain, Mass., LB, **$122,204**, est. $135,000, highway on Morton St., Dorchester. Bids Aug. 24. CD 8/11.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Central Constr. Co. of Lawrence, 6 Beacon Ave., Lawrence, Mass., CA, **$2,874,531**, est. $3,000,000. hy. and bridge constr., Kingston-Duxbury. Bids Aug. 3. CD 8/6, under LB.

▲† **Wexler Constr. Co.**, 118 Needham St., Newton, Mass., CA, **$1,117,375**, est. $1,000,000-$2,000,000. special AAA facilities, Reading and Nahant, MASSACHUSETTS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Aug. 3. CD 8/9, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Tornabene Bros. Co.**, 170 Needham St., Newton, Mass., LB, **$1,293,000**. Junior-Senior HIGH SCHOOL, HOPKINTON, MASS. Town School Bldg. Comn., Hopkinton, Mass. Bids Aug. 25. CD 8/17.

▲ **Concrete Constr. Co.**, 165 Chelsea St., Everett, Mass., LB, **$802,000,** elementary SCHOOL, Meacham St.;
Jefferson Constr. Co., 75 First St., Cambridge, Mass. LB, **$1,089,000,** two elementary schools, one on Meacham St. and other on Capar St., combination bid, SOMERVILLE, MASS. City, City Hall, Somerville, Mass. Bids Aug. 26. CD 8/4.

▲ **Farina Brothers Co., Inc.**, 429 Watertown St., Newton, Mass., CA, **$6,138,449**, M-209, Contract No. 1, replacement of Summer St. Building at Worcester State HOSPITAL, WORCESTER, MASS. State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncy St., Bostn, Mass. Bids Aug. 12. CD 8/16, under LB.

Bartlett Brainard Co., 589 Park Ave., West Hartford, Conn., CA, **$600,000**, test and assembly PLANT, Charter Oak Blvd., WEST HARTFORD, CONN. Niles-Bement Pond Co., Charter Oak Blvd., West Hartford, Conn. Bids Aug. 18.

▲ **A. F. Peaslee, Inc.**, 15 Lewis St., Hartford, Conn., CA, **$1,000,000,** OFFICE, Wolcott Hill Rd. at Cumberland Rd., WETHERSFIELD, CONN. Connecticut Power Co., 206 Pearl St., Hartford, Conn. Bids July 8. CD 6/16.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., **New York**—BA 9/21—Bd. Water Supply, 120 Wall St., Contr. 419, furnishing, del., installing and testing heating, ventilating and appurtenant equip. for Neversink intake chamber in Town of Neversink, Sullivan Co., and East Delaware intake and Downsville release water chambers in Town of Colchester. Plans deposit $5; adv. ENR 9/9. CD 10/16/44.

N. Y., **Astoria**—BA 9/22—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, Contr. 4, structures and equip.; Contr. 5, electrical; Contr. 6, plumbing; Contr. 7, heating and ventilating for constr. Bowery Bay Sewage Treatment Works Extens., Berrian Blvd. and 43 St. Plans deposit $100. Extended date. CD 823.

† **New Jersey**—BA On Or About 10/1—U. S. Eng., 2635 Abbottsford Ave., Phila. 29, Pa., embankment along Alloway Creek Dike at Artificial Island, Delaware River, CIVENG-36-109-55-23. CD 2/4/44.

† N. J., **Wrightstown**—SHOP, etc.—B.A. On Or About 10/8—U. S. Eng., 2635 Abbottsford Ave., P.O. Box 8629, Phila. 29, Pa., automotive shop, administration bldg., McGuire Air Force Base, ENG-36-109-55-8. CD 6/24.

BIDS ASKED—BUILDINGS

† N. Y., **Oswego**—GARAGE—BA 9/16—P. Wks. Office, Third Naval Dist., Federal Office Bldg., 90 Church St., New York Zone 7, garage, U. S. Naval Reserve Training Center, NOY 84960 (SF), Spec. 44536 (SF).

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Triborough Bridge & Tunnel Auth., Administrative Bldg., Randall's Island, New York, Zone 35,
Nassau Mascali Contr. Corp., 69-34 51 Ave., Woodside, N. Y., LB **$1,362,968,** grading, drainage, paving, utilities from Cross Bay Blvd., Contr. No. CB-1, Conduit Blvd., Queens Co. Bids Aug. 25. CD 8/9.

L. & J. Concrete Corp., 1815 38 St., Long Island City, N. Y., LB **$248,012,** est. $178,637, grading, regrading, curbing, recurbing, flagging, reflagging, constr. receiving basins, paving and b. conc. repaving etc. Astoria Blvd., from point approx. 424 ft. west of 8th St. to 8th St., 1st St. from 27 Ave. to Astoria Blvd. and in Astoria Blvd. from 1st St. to point approx. 320 ft. east of 1st St.; constr. intercepting sewers, etc. in 1st St. between 27 Ave. and Astoria Blvd. and in Astoria Blvd. between 1st and 8th Sts., Queens Boro., NEW YORK. President Queens Boro, Boro Hall, 120-55 Queens Blvd., Kew Gardens 24, N. Y. Bids Aug. 23. CD 8/16.

Villard Contg. Co., 25 Main St., Hastings-on-Hudson, N. Y., LB **$462,091,** sewage plants at gas stations and restaurants at Leroy, Genessee Co., Clifton Springs, Ontario Co.; Canastota, Madison Co.; So. Schenectady, Albany Co., New York State Thruway Auth. NEW YORK. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Aug. 26. CD 7/26.

P R O J E C T S   C O V E R E D

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a suuplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which lzst previous report was published.

Symbols and Abbreviations Include:

†	**Federal Government**
▲	**Project of $1,000,000 or over.**
ENR	**Engineering News-Record**
CD	**Construction Daily**

For additional reports see Construction Daily.

▲ **Terry Contg., Inc.**, Terry Bldg., 31 E. 27 St., New York 16, N. Y. CA **$2,692,548**, reconstr. Third Avenue Bridge over Harlem River between Manhattan and Bronx Boros, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids July 28. CD 8/3, under LB.

NEW JERSEY—New Jersey Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,
South Jersey Constr. Co., 207 Adams St., Riverside, N. J. LB, **$805,938**, grading, drainage, paving for service areas on Garden State Parkway at Cheesquake, Manasquan, Forked River, Absecon and Seaville, Contract No. 170, Middlesex, Monmouth, Ocean and Atlantic and Cape May Counties. Bids Aug. 1. CD 7/29.

▲ **NEW JERSEY**—State Hy. Dpt., State Hy. Office, Bldg., 1035 Parkway Ave., Trenton,
Sam Braen's Sons, 662 Goffle Rd., Hawthorne, N. J., LB, **$1,281,837**, grading, paving, bridges 2.053 mi. Palisades Interstate Parkway from Station 407 plus 00 to Station 516 plus 66, Alpine, Bergen Co. Bids Aug. 24. CD 8/4.

NEW JERSEY—State Hy. Dpt., 1035 Parkway Ave., Trenton,
Union Building & Constr. Corp., 631 Main Ave., Passaic, N. J., CA, **$898,253**, dualization 1.123 mi. Route 17, (Sect. 9A) from New York State Line to Ramapo River, Mahwah Twp., Bergen Co. Bids July 13. CD 7/19, under LB.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg,
Marsolino Constr. Co., Uniontown, Pa., CA **$2,278,066,** constr. 4.05 mi. Northeastern Extens. Sec. 35-C, Worcester, Upper Gwynedd and Towamencin Twps., Montgomery Co. Bids July 21. CD 7/23, under LB.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg,
Howard Worthington, Line Lexington, Pa., CA **$3,108,595**, constr. 4.29 mi. sect. Northeastern Extens. Sec. 35-B, Plymouth, Whitpain and Worcester Twps., Montgomery Co. Bids Aug. 4. CD 8/5, under LB.

Pennsylvania Power & Light Co., P. P. & L. Bldg., Allentown, Pa. Own Forces. **$200,000**. sub-station 3 mi. northwest of HUMMELSTOWN, PA.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,
Brann & Stewart, 771 Suburban Station Bldg., Phila. 3, Pa., LB **$1,614,718**, constr. 1.03 mi. State Rte. 100, incl. two plate girder and one I-beam bridges, West Whiteland Twp., Chester Co. Bids Aug. 27. CD 8/16.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
F. P. Asher, Jr. & Sons, Inc., 1715 West Ext., Annapolis, Md., CA **$810,774,** grading, drainage, surf. 4.84 mi. North-South Rte., near Carville, Contr. Q-168-38-220, Queen Anne Co. Bids July 20, awarded Aug. 25. CD 7/26, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Industrial Eng. Co.**, 50 Church St., New York, N. Y. CA Approx. **$1,000,000**. 10 story, 75x100 ft. PLANT addn., W. 23 St., NEW YORK, N. Y. Frank G. Shattuck Co., 58 W. 23 St., New York 10, N. Y. Walter Monroe Corey, 36 W. 40 St., New York, N. Y., engr.-archt. CD 6/10.

▲ **Joseph P. Blitz, Inc.**, 1 E. 57 St., New York, N. Y. CA Approx. **$2,000,000**. 4 story, approx. 300,000 sq. ft. rein.-con. WAREHOUSE and OFFICE, Tenth Ave. between 59 and 60 Sts., NEW YORK, N. Y. Miles Shoes, 345 Hudson St., New York 14, N. Y. CD 12/23.

Linden Park Estates Homes, c/o C. J. Kordys, archt., 116 Passaic St., Passaic, N. J., Owner Builds, **$400,000,** 20 HOUSES, on tract on Brookview Terrace near East Clinton Ave., BERGENFIELD, N. J.

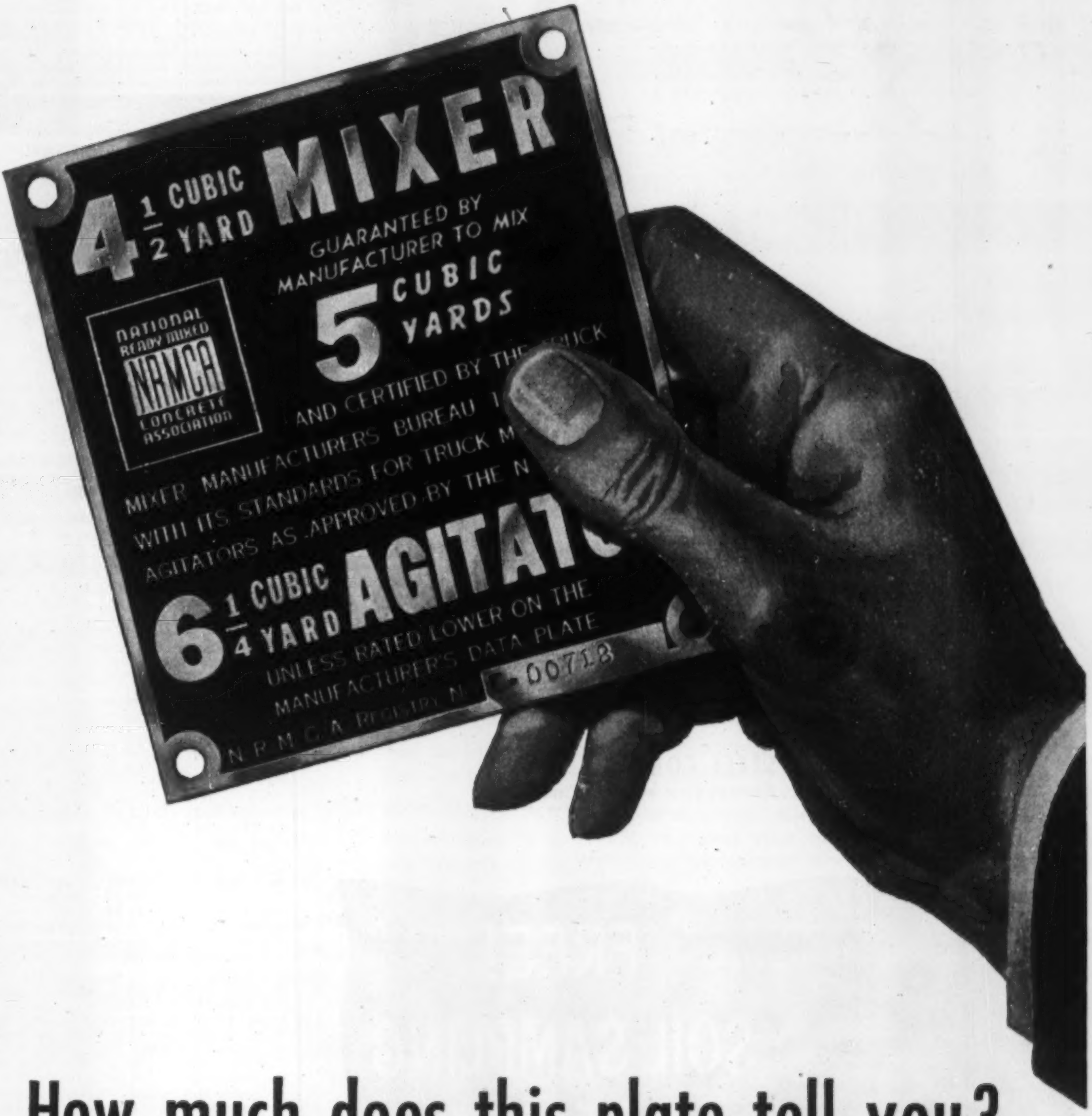
E. E. Austin & Son, Inc., 1919 Reed St., Erie, Pa., CA **$545,000**. 1 story, part bsmnt., 143x241 ft., steel, brick HIGH SCHOOL addn., alterations, GIRARD, PA. Girard School Dist. Auth., Girard, Pa. Bids July 22. CD 7/15.

Larson Constr. Co., 300 Mt. Lebanon Blvd., Pittsburgh, Pa., CA Approx. **$978,992**. 4 story, bsmnt., L-shaped, brick, concrete HOSPITAL and HOME, MOUNT LEBANON, PA. Methodist Hospital & Home for Aged, Mt. Lebanon, Pa. Bids Aug. 11. CD 7/29.

Henry Busse, Inc., 112 Wabash Ave., Pittsburgh, Pa., CA Approx. **$625,000**, 3 story, bsmnt., 106x58x112x108 ft. L-shaped, brick, block, stone GYMNASIUM-AUDITORIUM, Crafton, PITTSBURGH, PA. St. Paul's Orphanage, Noblestown Rd., Pittsburgh, Pa. Bids Aug. 11. CD 7/29.

▲† **Joseph Bahen Constr. Co.**, 418 Randolph Pl. N. W., Wash., D. C., LB, **$1,128,000** Base Bid; Alternate A, add **$1,500**; Alternate B, add **$7,000**;

(Continued on page 56)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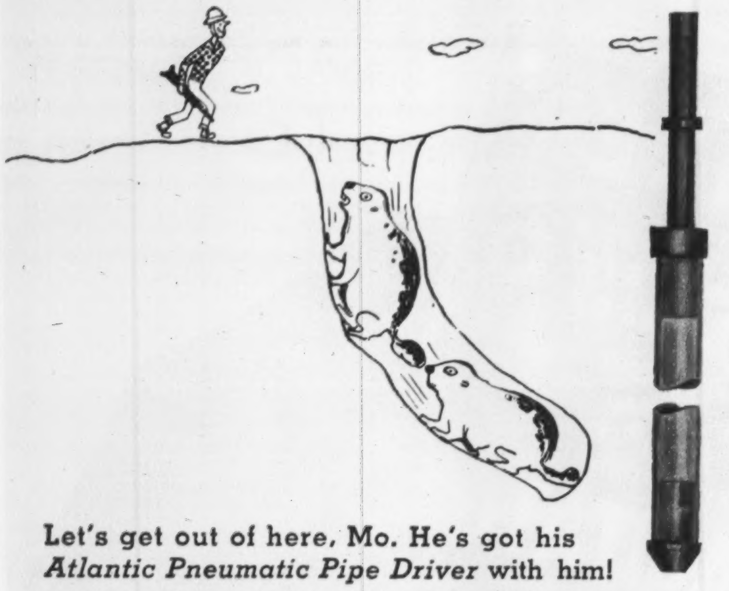
WORTHINGTON CORPORATION
Plainfield, N. J.



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(Continued from page 54)

American Constr. Co., 261 Constitution Ave. N. W., Wash., D. C., LB, **$1,128,000** Base Bid; Alternate A, add **$3,400**; Alternate B, add **$6,500** ADMINISTRATION BLDG., Howard University, WASH., D. C. General Services Admin., P. Bldgs. Service, General Services Bldg., Wash., D. C. Bids Aug. 26. CD 7/30.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Florida**—BA About 9/15—U. S. Eng., P.O. Box 4970, Jacksonville, maintenance dredging, Sch. A, 110,870 cu. yd. excav.; Sch. B, 68,900 cu. yd. excav. in Kissimmee River Floodway Channel, Central and Southern Florida Project Canal 38, CIVENG-08-123-55-8. CD 11/24.

▲ **NORTH CAROLINA-VIRGINIA**—BA 9/15—Carolina-Virginia Turnpike Auth. & Virginia Coastal Turnpike Auth., Virginia Beach, Va.,

Nags Head, N. C. and Virginia Beach, Va.—53 mi. coastal toll road between Nags Head, N. C. and Virginia Beach, Va. $3,000,000. Wm. Freeman, High Point, N. C., engr. CD 7/20.

† **Kentucky**—BA On Or About 9/17—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., const. approx. 2,800 ft. access road, with traffic bound surf., 3 pipe drainage culverts, railroad crossing, for Greenup Locks and Dam, approx. 4 mi. downstream from Greenup, Greenup Co., Serial No. CIVENG-46-022-55-12.

Fla., Chattahoochee—ELECTRIC DISTRIBUTION SYSTEM, etc.—BA 10/6—State Imprvt. Comn., Caldwell Bldg., Tallahassee, underground electric distr. sys., water distr. sys., sanitary sewers at Florida State Hospital. Over $500,000. Plans deposit $75. Reynolds, Smith & Hills, 227 Park St., Jacksonville, engrs.

BIDS ASKED—BUILDINGS

▲ **Tenn., Memphis**—TRUCK TERMINAL—BA 9/15—City, City Hall, and Shelby Co., Memphis, river-rail-truck terminal. $1,000,000. Norton & Rice, Falls Bldg., archts. CD 3/18.

Ala., Montgomery—HEALTH CENTER—BA 9/22—City and Montgomery Co., Court House, health center, $500,000. Sherlock, Smith & Adams, 303 Washington Ave., archts. CD 3/9/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

T. L. Dysard & Son, Statesville, N. C., LB, **$415,894**. rural telephone Proj. NC 5094, Yadkin Co., NORTH CAROLINA. New Hope Yadkin Telephone Membership Corp., Yadkinville, N. C. L. E. Wooten & Co., 306 S. Dawson St., Raleigh, N. C., engrs. Bids Aug. 17

▲† **Wright Contg. Co.**, 504 25 Ave., Columbus, Ga., CA **$988,484**, Sect. A;

Kaminer Constr. Co., Inc., Box 2055, Greenville, S. C. CA **$587,404**, Sect. B, aprons and taxiways and hydrant refueling and bulk storage facilities, Pope Air Force Base, No.-31-075-54-26, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids Aug. 5. CD 8/17, under LB.

Southeastern Fair Assn., 1625 Pryor Rd. S.W., Atlanta, Ga., Day Labor. **$60,000** repairing 3 exhibit buildings, ATLANTA, GA.

Leo T. Barber, Moultrie, Ga., CA, **$116,220**, natural gas distr. sys., THOMSON, GA. City, Thomson, Ga. Bids Aug. 12. CD 3/31/53.

† **Robert E. Lee & Co., Inc.**, Manning, S. C., CA, **$927,030**, Canal and Levee 12 in Central and Southern Florida Flood Control Proj., CIVENG-08-123-54-53, FLORIDA. U. S. Eng., P.O. Box 4970, Jacksonville, Fla. Bids July 16. CD 7/21, under LB.

▲ **City**, City Hall, Hialeah, Fla. rejected bids, 100 mi. concrete sidewalks, HIALEAH, FLA. LB, **$1,023,960**. Will re-advertise. CD 8/27, under LB.

▲† **Empie Gas Eng. Co.**, 7 Baltimore Pl. N.W., Atlanta, Ga., LB, **$1,176,082**, aircraft fueling sys., Homestead Air Force Base, Inv. 55-4, HOMESTEAD, FLA. U. S Eng., P.O. Box 4970 Jacksonville, Fla. Bids Aug. 26. CD 7/19.

Arthur Pew Constr. Co. & E. N. Murray, Buckhead Theater Bldg., Atlanta, Ga., CA, **$329,665**, water filter plant addn., CULLMAN, ALA. City, Cullman, Ala. CD 6/9.

P. A. Buchanan Contg. Co., P.O. Box 1903, Birmingham, Ala., CA, **$163,097**, water sys., MORRIS, ALA. Town, Morris, Ala. CD 2/9.

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir., Jackson,

John H. Moon & Sons, Port Gibson, Miss., CA **$249,212**, est. $245,000, 0.128 mi. bridge on Miss. Hy. No. 8 between Minter City and Philipp, Proj. F-016-2 (4), LeFlore and Tallahatchie Counties. Bids Aug. 24. CD 8/12.

▲ **MISSISSIPPI**—State Hy. Dpt., T. C. Robbins, dir., Jackson,

Boyd Constr. Co., Grenada, Miss., CA **$512,742**, est. $635,000, grade, drain, culverts and bridges 8.942 mi. U. S. Hy. 51 between Crystal Springs and Jackson, Proj. FI-I-001-2 (4), Hinds Co.;

Dye & Coggins, Tupelo, Miss., CA **$221,430**, est. $240,000, grade, box bridge, base and double bit. surf. tr., 5.525 mi. Miss. Hy. 6 between Nettleton and Tupelo, Proj. SP-1474 (3), Lee Co.;

J. T. Reed, Contractor, Louisville, Miss., CA **$199,947**, est. $265,000, grade, drain, culverts 9.694 mi. Miss. Hy. 433, between Satartia and Bentonia, Proj. SP-433-3474 (2), Yazoo Co.;

W. E. Blain & Son, Mount Olive, Miss., CA **$159,597**, est. $220,000, base, double bit. surf. tr. 8.332 mi. Miss. Hy. 17 between Camden and Old U. S. Hy. 51, Proj. SP-17-5474 (4), Madison Co.;

Talbert & Brown, Inc., 19 22nd Ave. S., Meridian, Miss. CA **$89,330**, est. $92,000, base, double bit. surf.

tr. 4.565 mi. Miss. Hy. 19 between Arlington and Philadelphia, Proj. SP 19-5474 (5), Neshoba Co.;

M & W Constr. Co., Tupelo, Miss., LB **$231,000**, est. $230,000. grade, bridges, base, double bit. surf. tr. 1.732 mi. Miss. Hy. 15 between New Albany and Blue Mountain, Proj. F-022-4 (3), Union Co. Grand total $1,414,046. Bids Aug. 24. CD 8/12.

▲† **Blount Bros. Constr. Co.**, Box 1144, Montgomery, Ala., CA **$1,165,992**, storm sewers and pumping station, Yazoo City, **MISSISSIPPI**. U. S. Eng., P.O. Box 60, Vicksburg, Miss. Bids July 22. CD 6/16.

† **Farnsworth & Chambers Co.**, Box 74, Houston, Tex., CA **$960,345**. altering New Orleans & Lower (Missouri-Pacific Lines) R.R. by constr. single track bridge over Algiers Navigation Canal, a bridge over Plaquemine Drainage Canal, etc. Gretna, Inv. No. 54-254, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids July 30, awarded Aug. 19. CD 7/8.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

Codell Constr. Co., Winchester, Ky., CA **$745,034**, crushed stone and bit. materials surf., 3 box type bridges 7.108 mi. sect. St. Rte. 32 from Tazewell and extending to near Powell River, Proj. No. F-032-3-(3), Claiborne Co.;

Forcum James, Dyersburg, Tenn., CA **$515,575**, wid'n and resurf. with bit. materials 1.26 mi. sect. St. Rte. 78 in Dyersburg, from point approx. 0.34 mi. north of St. Rte. 20 and extending 1.26 mi. to north city limits, Proj. No. SAMP-220-A, Dyer Co. and bit. materials wid'n. and resurf. 13.06 mi. sect. St. Rte. 78 from north city limits of Dyersburg and extending to St. Rte. 79. Proj. No. SAP-1116, Dyer, Obion and Lake Counties;

Wesco Paving Co., Volunteer Bldg., Chattanooga, Tenn. CA **$698,250**, crushed stone and bit. materials paving 3.992 mi. sect. St. Rte. 2, from St. Rte. 30 and extending 3.992 mi. northward, Proj. No. FI-002-4-(8), McMinn Co.;

Wright Constr. Co., 504 25 Ave., Columbus, Ga., CA **$1,238,726**, bit. materials surf. 6.491 mi. sect. St. Rte. 26 from 1 mi. west of Doweltown and extending to Smithville, Proj. No. F-026-1-(12), DeKalb Co. Grand total $3,197,585. Bids July 30. CD 8/4, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

High Point Monthly Meeting of Friends, High Point, N. C. rejected bids, July 15, MEETING HOUSE, HIGH POINT, N. C., LB, **$326,830**, CD 7/30, under LB.

M. B. Kahn Constr. Co., P.O. Box 595, Columbia, S. C. LB, **$473,159**, SCHOOL OF BUSINESS BLDG., COLUMBIA, S. C. University of South Carolina, Columbia, S. C. CD 12/18.

Lynwood Homes, Inc., 689 Boulevard N. E., Atlanta, Ga. Force Account, **$300,000**, 42 RESIDENCES, ATLANTA, GA.

† **Holt & Thomason Constr. Co.**, Bell Bldg., Montgomery, Ala., CA, **$549,000**, EAST UTILITIES exten., Marine Corps Depot of Supplies, NOY 82148, ALBANY, GA. P. Wks. Office, Naval Base, S. C. CD 7/22, under LB.

Christian & Bell, 664 Spring St. N. W., Atlanta, Ga. CA, **$562,190**, OFFICE, ATLANTA, GA. Federated Mutual Implement & Hardware Insurance Co., Healey Bldg., Atlanta, Ga.

Strother-Barge Co., 189 Cain St. N. E., Atlanta, Ga., CA, **$354,226**, CLASSROOM BLDG. No. 3, ATLANTA, GA. The Westminister Schools, 3210 Howell Mill Rd. N. W., Atlanta, Ga. Bids Aug. 3.

Cherokee Constr. Co., 495 N. E. 8 St., Cleveland, Tenn., CA, **$598,900**, SCHOOLS, CEDARTOWN, GA. Polk Co. Bd. Educ., Cedartown, Ga. Bids July 29. CD 7/6.

The Jordan Co., P.O. Box 1179, Columbus, Ga., CA, **$836,897**, SCHOOLS, DUBLIN, GA. Laurens Co. Bd. Educ., Dublin, Ga. Bids July 20. CD 7/6.

Dublin Constr. Co., Dublin, Ga., LB, **$460,885** PLANT, STATESBORO, GA. Bulloch Development Corp., Statesboro, Ga. Bids July 23. CD 7/23.

Dyson & Co., 806 W. Romana St., Pensacola, Fla. CA, **$331,300**, Suter SCHOOL addn., PENSACOLA, FLA. Escambia Co. P. Instruction, 215 W. Garden St., Pensacola, Fla.

Brown-Mason, Inc., 3415 Henderson Blvd., Tampa, Fla., Force Account, **$350,000**, 41 RESIDENCES, TAMPA, FLA.

M. T. Spillers, Buffalo Ave. and Orient Rd., Tampa, Fla., Force Account, **$350,000**, 50 RESIDENCES, TAMPA, FLA.

▲ **Gandy Homes, Inc.**, 4502 S. Dale Mabry Highway, Tampa, Fla., Force Account, **$1,000,000**. 100 RESIDENCES, TAMPA, FLA.

Brizendine Constr. Co., 4909 Montevallo Rd., Birmingham, Ala., Force Account, **$300,000**. 40 RESIDENCES, BIRMINGHAM, ALA.

C. T. Realty Co., c/o Charles H. McCauley, archt., Jackson Bldg., Birmingham, Ala., Force Account, **$400,000**, 40 RESIDENCES, BIRMINGHAM, ALA.

Daniel Constr. Co. of Alabama, P.O. Box 1511, Birmingham, Ala., CA Est. Over **$300,000**. MILL addn., COOSA PINES, ALA. Coosa Pines River Newsprint Co., Coosa Pines, Ala.

▲ **Jehle Brothers, Inc.**, 1616 Mt. Meigs Rd., Montgomery, Ala., Force Account, **$1,600,000**, 206 RESIDENCES, MONTGOMERY, ALA.

Lynn Knox Constr. Co., 1417 17 Ave., Phenix City, Ala., Force Account, **$300,000**, 30 RESIDENCES, PHENIX CITY, ALA.

C-B Constr. Co., Box 1967, Baton Rouge, La., CA, **$418,200**, 1 story, 60x130 ft. BANK, air conditioned, Main and Gabasee Sts., HOUMA, LA. Terrebonne Bank & Trust Co., Houma, La., Bids Aug. 16, awarded Aug. 20. CD 8/2.

▲ **R. P. Farnsworth & Co., Inc.**, 1515 S. Salcedo St., New Orleans, La., CA, **$1,198,539**, 129 HOUSES, In

Airport Hangar. 250′ laminated timber trusses, fabricated by Timber Structures, Inc., Portland, Ore., and assembled with TECO shear plates.

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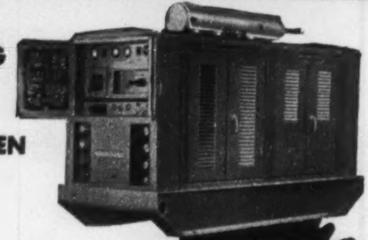

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River Oak Subdivision, Bedford Dr., between Gen. Meyer and Patterson Dr., NEW ORLEANS, LA. The Aurora Development Co., 5001 Gen. Meyer Ave., New Orleans, La. Awarded Aug. 19.

Sun Constr. Corp., 2100 Ailor Ave., Knoxville, Tenn. CA Approx. **$350,000.** APARTMENT, KNOXVILLE, TENN. Drake Apartments, Inc., 11 2nd. St., Knoxville, Tenn.

† **W. A. Catlett Constr. Co.**, 4601 Chapman Hy., Knoxville, Tenn., CA, **$598,417**, Est. $566,776, rehabilitation BLDG. 9201-1 for relocation SHOPS in Y-12 area, Inv. No. 401-55-1A, OAK RIDGE, TENN. U. S. Atomic Energy Comn., Admin. Bldg., Oak Ridge, Tenn. Bids Aug. 12. CD 8/25, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

American Constr. Co., c/o Loesch & Green Constr. Co., 4100 Brookpark Rd., Cleveland 9, O., LB **$428,622**, est. $519,000. grade, drain, pave Five Points Rd., from N.Y.C. tracks to Engle Rd. and imprv. Engle Rd. from 570 ft. south of C.C.C. & St. Louis tracks to Hummel Rd., Brook Park, CLEVELAND, O. Comrs. Cuyahoga Co., 135 Court House, Cleveland 14, O. Bids Aug. 23. CD 8/12.

Red Eagle Corp., 176 Walhalla Rd., Columbus, O., LB **$340,682**. constr. 3 mi, Sunbury Rd. and relocating Vanes Valley Rd. Bridge in connection with Hoover Dam municipal reservoir proj., COLUMBUS, O. City, City Hall, Columbus, O. Bids Aug. 24. CD 8/19.

Ranallo Constr. Co., 298 E. Cayahoga Falls Ave., Akron, O., LB **$179,710**, est. $200,000. Highlands District storm and sanitary sewers, SILVER LAKE, O. Village, John T. Mellion, village mgr., Silver Lake School Bldg., Silver Lake, O. Bids Aug. 16. CD 8/3.

John C. Bluhm & Son, 6361 N. Lake Dr., Milwaukee, 11, Wis., CA, **$79,045**, c. conc. paving W. Leon Terrace;

A. P. Pavers, Inc., 4030 W. Douglas Rd., Milwaukee Wis., CA, **$128,531**, c. conc. paving W. Capitol Dr. and W. Keefe Ave., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Aug. 20, awarded Aug. 24.

BUILDINGS

LOW BIDS AND CONTRACTS

Becker Constr. Co., 7701 W. Blue Mound Rd., CA, **$400,000**, 4 story, 75x75 ft., Wort COOLER, MILWAUKEE, WIS. Miller Brewing Co., 4002 W. State St., Milwaukee, Wis. Chas. A. Nagel & Assocs., 1615 Underwood Ave., Wauwatosa 13, Wis., engrs.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **Montana**—BA 9/21—Bureau Reclamation, Dpt. Interior, Great Falls, loop spillway and wasteway Spring Valley Canal, Station 240 plus 30, Greenfield Division, Sun River Project, near Fairfield, Teton Co., Spec. DC-4238. L. N. McClellan, ch. engr. CD 5/25/44.

† **Minnesota**—BA 9/23—U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul, Zone 1, replacing Boule Dam, Locks and Dam No. 2, Mississippi River on right bank of river, approx. 1.4 mi. upstream from Hastings, Neb. with a concrete gravity sect. No. CIVENG-21-018-55-13. CD 8/27.

BIDS ASKED—BUILDINGS

Mo., University City (St. Louis 5, P.O.)—BA 9/16—SCHOOL—School Dist. of University City, Bd. Educ., Dr. Julius E. Warren, supt. Schools, 6701 Delmar Blvd., Zone 5, Senior High School addn., Jackson and Balson Aves. Plans deposit $25. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, archt.-engr. CD 4/16/53.

▲ **Mo., St. Louis**—HOUSING — BA 10/1 — St. Louis Housing Auth., John J. O'Toole, exec. dir., 901 Washington Ave., Zone 1, Phase No. 1 of Mo. 1-6, four 9 story 660-unit apartments, in area bounded by Carr, 18, 20 and O'Fallon Sts. $9,000,000. Hellmuth, Yamasaki & Leinweber, Inc., 825 Locust St., Zone 1, archt. CD 1/2/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IOWA—State Hy. Comn., Ames,

Taylor & Isenhour, Inc., Hudson, Ia., LB, **$75,986** bridges, culverts, S-614 (5), Black Hawk Co.;

Easton Constr. Co., Ames, Ia., LB, **$66,782** bridges, culverts F-3 (5), Jefferson Co.;

Hanson Constr. Co., Washington, Ia., LB, **$68,436**, bridges, culverts FG-3 (6), Jefferson Co.;

A. Olson Constr. Co., Waterloo, Ia., LB, **$97,376** bridges, culverts SN-1018, Linn Co.;

Iowa Bridge Co., 311 Central National Bldg., Des Moines, Ia., LB, **$133,555**, bridges, culverts C-354 (2), Marshall Co.;

A. W. Cohran & Son, Des Moines, Ia., LB, **$85,406** bridges, culverts, S-752 (1), Monona Co. Bids Aug. 24. CD 8/12.

▲ **IOWA**—State Hy. Comn., Ames,

Booth & Olson, Inc., 529 Insurance Exchange Bldg., Sioux City, Ia., LB, **$209,425**, paving 4.673 mi. Special F-402 (6) Greene Co.; LB **$644,838** paving 13.427 mi. Special F-459 (3), Harrison, Pottawattamie and Shelby Counties; LB **$478,741** paving 9.819 mi. Special F-910 (3), Plymouth Co.;

Central Constr. Co., Indianola, Ia., LB, **$394,897** paving 4.79 mi. F-289 (5), Johnson Co.;

Fred Carlson Co., Decorah, Ia., LB, **$79,009** paving 1.121 mi. F-174 (6), Poweshiek Co.; LB **$531,640** paving 8.164 mi. F-799 (7) Poweshiek Co.;

Hargrave Constr. Co., 2424 Bever St. S. E., Cedar Rapids, Ia., LB, **$120,070**, pavement wid'n. and resurf. 2.765 mi. FN-553, Benton Co.; LB **$173,134**, b. conc. 14.667 mi. P-1049, Poweshiek and Tama Counties; LB, **$157,117**, b. conc. resurf. 14.008 mi. FN-47, Tama Co.;

Cameron Joyce Co., Keokuk, Ia., LB, **$196,996** stab. base and bit. 6.231 mi. Special F-839 (6), Calhoun and Webster Counties;

Lee & Johnson, Inc., 215 Insurance Exchange Bldg., Sioux City, Ia., LB, **$234,423** stab. base and bit. 8.818 mi. Special F-811 (5) Hamilton and Webster Counties;

Green Limestone Co., Greene, Ia., LB, **$446,734** stab. base, bit. 15.701 mi. Special F-351 (6), Humboldt-Wright, Hancock and Kossuth Counties;

R. B. Burch, Inc., Cedar Rapids, Ia., LB **$108,584** b. conc. resurf. 8.066 mi. F-1014 (1), Linn Co.;

Brueck Constr. Co., Battle Creek, Ia., LB, **$156,583** grading 13.294 mi. Special FN-994, **Monona Co.** Bids Aug. 24. CD 8/12.

▲† **GWL Constr. Co.**, P.O. Box 3776, **Oklahoma City**, Okla., CA, **$2,638,581**, est. $2,879,191. **10 dormitories**, 2 mess halls, Little Rock Air Force Base, ENG-03-050-55-13, JACKSONVILLE, ARK. U. S. Eng., P.O. Box 867, Little Rock, Ark. Bids Aug. 25. CD 7/29.

† **Wilson Constr. Co.**, 727 S. 11 St., Lincoln, Neb., LB **$267,493**. operations and academic bldgs., Lincoln Air Force Base, Inv. 25-066-55-7, LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 24. CD 8/2.

BUILDINGS

LOW BIDS AND CONTRACTS

Burton W. Duenke Building Co., 1057 Brentwood Blvd., Brentwood 17, Mo. Owner Builds. Approx. **$345,000.** fifteen 1 story, 36x51 ft. frame DWELLINGS, attached GARAGES, concrete toe wall fdns., 100 and 200 blocks of Horshoe Dr., KIRKWOOD (St. Louis 22 P. O.), MO.

C. E. Dalton, 5124 DeVille Ave., Shrewsbury 9, Mo. Owner Builds. **$304,000**. 38 addnl. 24x40 ft. brick ranch type DWELLINGS, in 4300 block of Al Clare Dr. and 8100 blocks of Carlsbad, Morgandord, Parkwood and Wanda Aves., ST. LOUIS, MO.

▲ **Lawless & Alford, Inc.**, Box 1248, Corpus Christi, Tex. LB **$1,389,000**, HOSPITAL, HARLINGEN, TEX. Valley Baptist Hospital, (Baptist General Convention of Texas), Baptist Bldg., Dallas, Tex. Bids Aug. 24. CD 7/15.

McClellan Constr. Co., Box 448, Waco, Tex., LB **$841,000**, 3 story BANK with drive-in depositories, 1 story shop, WACO, TEX. First National Bank, Amicable Bldg., Waco, Tex. Bids Aug. 24. CD 7/23.

Newstrom-Davis, 2000 W. 8 St., Denver, Colo., LB, **$314,567**, general contract 1 story TRAINING SCHOOL addn., RIDGE, COLO. State of Colorado, State Training Home, Ridge, Colo. Bids Aug. 17.

FAR WEST

BIDS ASKED—BUILDINGS

† **Wash., Camp Hanford**—POWER FACILITIES—BA 9/21—U. S. Eng., City-County Airport, Walla Walla, Wash., addnl. power facilities, Inv. 55-6. CD 9/12/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IDAHO—State Hy. Dpt., Boise,

Frank J. Bouine, Yardley, Wash., CA, **$483,476** roadway, bit. surf. 4.957 mi. U. S. 95, Idaho Co. Bids Aug. 24.

United Concrete Pipe Corp., 14041 E. Arrow Hy., Baldwin Park, Calif., CA **$178,856**, est. $221,000, furnishing pipe for connection of new sewerage pumping plant at 15 N and 12 W to sewerage sys., SALT LAKE CITY, UTAH. Salt Lake City Corp., Roy W. McLeese, city engr., City-County Bldg., Salt Lake City, Utah. Clyde C. Kennedy, 604 Mission St., San Francisco, Calif., engr. Bids Aug. 10. CD 8/4.

† **Emil H. Krall**, 1825 N. 11 Ave., Phoenix, Ariz., LB, **$333,621**, est. $400,000 Warehouse "A", parachute and dinghy shop, AIO shop, Auto Shop No. "E", utilities, Yuma County Airport, ENG-04-353-55-12,

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YUMA, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 20. CD 8/11.

† **OREGON**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland,

J. W. **Briggs**, 233 Oregon St., Bend, Ore., CA **$268,330**. grading 5.788 mi. Goodwin Peak Rd. Lane and Douglas Counties. Awarded Aug. 20. CD 8/11, under LB.

† **Crowell-Wilson Co.**, 2960 Marsh St., Los Angeles, Calif., CA, **$520,516**, tactical and administrative facilities, Special AAA sites, LA-04-C, LA-04-L, Los Angeles Co. CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 19, awarded Aug. 20. CD 8/11.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **C. E. Youngdahl & Co., Inc.**, Box 583, Portland 7, Ore., LB, **$1,478,000**, general contract HIGH SCHOOL, VANCOUVER, WASH. School District 37, Shumway Junior High School, Vancouver, Wash. Bids Aug. 24. CD 7/26.

B. W. Horn Co., Box 2004, Terminal Annex, Los Angeles, Calif., LB, **$393,875**, 30,000 sq. ft. concrete block WAREHOUSE, PALMDALE, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids Aug. 20. Herman C. Light, 9061 Santa Monica Blvd., Los Angeles, Calif., archt.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Gulf Constr. Ltd., 94 St. Pierre St., Matane, Que., LB, **$263,210**, Wharf, VALLEYFIELD, NEWFOUNDLAND. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Aug 11. **(Correction-Contractor)** CD 8/25, under LB.

ONTARIO—Dpt. Hys., Toronto,

Peel Constr. Co., 75 Main St., W., Brampton, Ont., CA, **$216,640** Contract 54-106, hot mix paving, Stoney Creek, Circle to Winona Traffic Light 6 mi. Hamilton Div.; CA, **$203,355**, hot mix. paving 3 mi. Freeman Cloveleaf to Hy. 20, Windermere Rd. to Stoney Creek Circle, Contract 54-105, Hamilton Div. Bids Aug. 20.

BUILDINGS

LOW BIDS AND CONTRACTS

Hembruff & Dambrowitz, Matheson, Ont., CA, **$300,000** 2 story, 40x230 ft., and 20x30 ft., concrete HOSPITAL Addn., COCHRANE, ONT. Minto Hospital Bd., Cochrane, Ont. Bids July 1.

J. H. Ross Constr. Co. Ltd., 79 Huntley St., Toronto, Ont., CA, **$345,000.** APARTMENT, Bayview and Hillsdale Aves., TORONTO, ONT. Owner, c/o Gordon Bazeley, archt., 602 Bayview Ave., Toronto, Ont. CD 2/1.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Alaska**—BARRACKS—BA 9/17—U. S. Eng., Anchorage, two 200-man masonry barracks, Ladd Air Force Base, ENG-95-507-55-19. **$1,000,000.** Plans deposit $20. CD 11/25/52.

BIDS ASKED—BUILDINGS

† **Alaska, Fort Richardson**—HEADQUARTERS—BA 9/23—U. S. Eng., Anchorage, two 1 story 2,600 sq. ft. rein.-con., masonry battalion headquarters and supply bldgs. ENG-95-507-55-23. Plans deposit $20. CD 11/25/52.

Proposed Projects—

WATER SUPPLY

Fla., Clearwater—City, City Hall, bond election Oct. 8, WW imprvs. **$850,000.** Briley, Wild & Assocs., 8 N. Wild Olive Ave., Daytona Beach, consult. engrs. CD 11/17.

Ky., Erlanger—City, City Hall, water sys. from 36 St. and Latonia Ave. to Corp. limits. **$850,000.** Howard K. Bell, 553 S. Lime St., Lexington, consult. engr. CD 8/11.

▲ **O., Cleveland**—City, Dpt. P. Utilities, Emil J. Crown, dir., City Hall, Zone 14, electrification of Kirtland water pumping station, incl. installation 6 electric pumps. **$1,000,000.** Frank J. Schwemler, comr. Div. Water & Heat.

▲ **Okla., Tulsa**—City, City Hall, long range imprv. water distr. sys. **$1,000,000.** W. R. Holway, 302 E. 18 St., consult. engr. CD 3/5/52.

SEWERS, WASTE DISPOSAL

▲ **Calif., Fairfield**—Fairfield-Suisun Sewer District, Fairfield, **$1,060,377** bond election Nov. 2 sewage disposal plant, pumping plant, addnl. lines. Solano Engineers & Assocs., 50 Lincoln Hy., Vallejo, consult. engrs. CD 10/29/51.

Fla., Clearwater—City, bond election Oct. 8, sanitary sewer imprvs. **$500,000**. Briley, Wild & Assocs., 8 N. Wild Olive St., Daytona Beach, consult. engrs. CD 11/17.

Tex., Palestine—City, bond election Sept. 11, two water supply wells, **$90,000**; water mains-storage, **$120,000**. CD 8/23.

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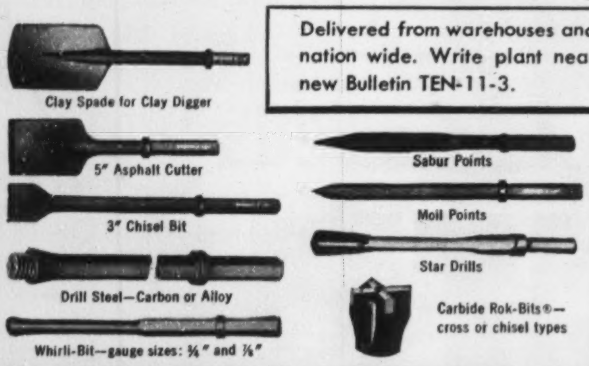
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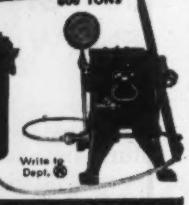

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▲ **Ga., Columbus**—Muscogee Co. Comn., Court House, trunk sewerage sys. **$3,000,000.** Robert & Co. Assocs., 96 Poplar St. N. W., Atlanta, consult. engrs.

▲ **Ky., Louisville**—Metropolitan Sewer Dist., 414 W. Jefferson St., bond election Nov. 2, single sewage treatment plant in Paddys Run, **$6,000,000;** necessary interceptors, **$9,000,000,** Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., consult. engrs. CD 7/12.

▲ **Ind., New Castle**—City, City Hall, sewers and sewage plant, **$2,000,000.** Henry B. Steeg & Assocs., 2331 N. Meridian St., Indianapolis, consult. engrs. CD 5/28/52.

O., Van Wert—Village, D. J. Underwood, mayor, Van Wert, bond election Nov. 2, expand sewage plant, **$223,000;** imprv. sewers, pumping station, repair existing interceptor sewers, **$674,000.** CD 3/18/53.

Tex., Corsicana—City, c/o Tom Newton, engr., sanitary sewerage sys. imprvs. and sewage treatment plant. Approx. **$500,000.** Reaves & Gregory, 3332 W. 7th St., Fort Worth, consult. engrs.

▲ **Wash., Seattle**—City, County-City Bldg., bond election Nov. 2, sewers in West Seattle, **$2,055,000;** Seaview Ave., **$165,000;** Blue Ridge, Greenwood and North Beach, **$310,000;** addn. plant facilities at Lake City, **$925,000;** Magnolia Pier, 91 and Denny Way, **$1,500,000;** Inner Elliott Bay Interceptor, **$1,500,000;** North Trunk treatment plant, **$4,000,000;** W. E. Parker, city engr. CD 8/16.

Wash., Seattle—City, County-City Bldg., Seattle, Zone 4, bond election **Nov. 2,** Lake City Treatment Plant. addn. **$915,000.**

BRIDGES

▲ **Wash., Seattle**—City, County-City Bldg., Seattle, Zone 4, bond election Nov. 2, extending Alaskan Way viaduct, South Holgate St. **$4,500,000;** Broad-Mercer-Aurora underpasses, **$1,500,000;** second Montlake bridge, **$3,000,000;** 23 and E. Madison Interchange, **$345,000,** Connecticut St. Viaduct from Lake Way to Alaskan Way, **$6,500,000.** E. 45 and 22 Ave N. E. Interchange, **$50,000.** W. E. Parker, city engr. CD 8/18.

▲ **Wis., Milwaukee**—City, City Hall, S. Whitnall Ave. Bridge, **$100,000;** S. 35 St. Bridge over Northwestern R. R. tracks, **$300,000;** reconstr. S. 6 St. Viaduct, **$500,000;** S. 1 St. Bridge over Kinnickinnic River, **$800,000.** Lloyd D. Knapp, city engr. Geo. C. Ashton, bridge engr. CD 12/3/43.

STREETS AND ROADS

▲ **Fla., Bradenton—City, repaving 175 mi. streets, $1,000,000.** Smith & Gillespie, P. O. Box 1048, Jacksonville, consult. engrs.

Fla., Ocala—City, **bond election Nov. 2, street** imprvs. **$771,950.**

▲ **Ky., Louisville**—City, City Hall, **$4,000,000-$5,000,000** bond election **Nov. 2,** street imprvs., W. W. Sanders, city engr. CD 6/1/51.

▲ **Mich., Lansing**—City, Millie M. Brown, clk., extending East Main St. incl. wid'n. E. Main St., eliminating spur track Hosmer St.; bridge over Red Cedar River and grade separation Shepard St. **$1,300,000.** Foster Eng. Co., 804 Bauch Bldg., engr. CD 4/23.

▲ **Wash., Seattle**—City, County-City Bldg., Seattle, Zone 4, bond election Nov. 2, 25 Ave. N. E., E. 45 St. to Bothell Way, **$810,000;** widening W. Holden St., 28 Ave. S. W. to Delridge Way, **$25,000;** realign E. John and E. Thomas, **$50,000;** wid'n. Roosevelt Way, E. 85 St. to 125 St., **$200,000;** wid'n. 35 Ave. N. E., E. 85 St. to Bothell Way, **$300,000;** wid'n. 15 Ave. N. E., E. 85 St. to Bothell Way, **$250,000;** wid'n 5 Ave. N. E., E. 85 to 125 St. **$250,000;** constr. 8 Ave. N. W., W. 85 St. to Holman Rd. **$75,000;** widening Alaskan Way, Holgate to Spokane Sts., **$150,000;** wid'n. Rainier Ave., Dearborn to Atlantic Sts., **$50,000;** wid'n. 11 Ave. N. E., canal to Bothell Way, **$500,000;** wid'n. 23 Ave. N. E. Madison to Turner Way, **$100,000;** wid'n. Sand Point Way and E. 12 St., E. 75 St. to Roosevelt Way, **$600,000;** wid'n. Roosevelt Way, E. 125 St. to Aurora Ave. **$200,000;** wid'n. 1 Ave. S and Myers Way **$125,000;** wid'n. Graham St., Empire Way to Swift Ave. **$187,000;** wid'n. N. 40 St. Stone Way-Wallingford, **$40,000.** W. E. Parker, city engr. CD 8/18.

EARTHWORK, WATERWAYS

▲† **Alabama**—U. S. Eng., P.O. Box 1169, 2301 Grant St., Mobile, Zone 7, access road and excavation for lock, and driving lock foundation, Warrior River, **$1,800,000.**

▲† **Georgia**—U. S. Eng., P.O. Box 1169, 2301 Grant St., Mobile 7, Ala., hydroelectric powerhouse and switchyard; main and auxiliary switchgear and switchboard, two 58,777 kva, 3, FOW, 13.2 2/220/110, KVA transformers, highway relocations at Thompson Bridge and 1.2 mi. of 20 ft. roadway State Road 136; Wilkie Bridge and 2.8 mi. of 18 ft. roadway, State Road 136; 12.5 mi. of State Hy. 53, Lanier Bridge on Hy. 53, Bolling Bridge on Hy. 53, Browns Bridge Super Structure on Hy. 141, two mile Creek Bridge Hy. 141, all for Buford Dam, Chattahoochee River, **$9,300,000.**

▲† **Iowa**—U. S. Eng., Clock Tower Bldg., Rock Island, Ill., Coralville Reservoir on Iowa River, Upper Mississippi Basin Project, Johnson Co. **$1,750,000.**

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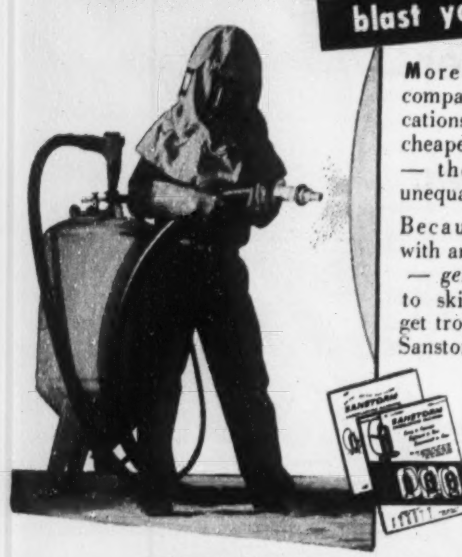

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Wis., Milwaukee—City Harbor Comn., City Hall, retaining wall in Lake Michigan to reclaim 21 acres submerged land. **$550,000.** Lloyd D. Knapp, city engr.

AIRPORTS

▲† **Ariz., Tucson**—SHOP, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., base ammo shop, Building 1A, **$60,000;** fire alarm sys., **$300,000;** armament and electronics shop, Base 3C, **$300,000;** heavy taxiway access apron, **$300,000;** light aircraft blast pad, **$60,000;** road and parking area, **$100,000;** crew readiness bldg. 1A (Squadron 1) ADC **$300,000;** light hangar access apron, **$60,000;** heavy operational parking apron extension, **$200,000;** stabilize taxiway shoulder, **$200,000;** strengthen heavy operational parking apron, all at Davis-Monthan Air Force Base, **$1,500,000.** CD 5/21/51.

▲† **Utah, Hill Air Force Base**—RUNWAY—U. S. Eng., 74 New Montgomery St., San Francisco, Calif., runway. **$10,000,000.** CD 2/10.

▲ **Utah, Salt Lake City**—ADMINISTRATION BLDG.—Salt Lake City Corp., City-County Bldg., plans by Ashton, Evans & Brazier, 24th S.W. Temple St., 30,000-40,000 sq. ft. admin. bldg., incl. ramps and aprons at municipal airport. **$2,000,000.** CD 1/25.

PUBLIC BUILDINGS

▲ **Ala., Birmingham** — SCHOOLS — Jefferson Co. Bd. Educ., Court House, (1) Gardendale High School **$500,000;** (2) Shades Mountain High School **$500,000;** (3) Hueytown High School **$500,000;** (4) Greenwood Junior High School **$300,000.**

Ala., Mobile—HEALTH—City and Mobile Co. plans by Edward D. Slater, O'Gwynn Bldg., health bldg., **$510,000.** CD 1/9/50.

▲ **Calif., Daly City**—SCHOOLS—Jefferson Union High School District, Daly City, **$1,600,000** bond election Oct. 5, Westmore High School and school in Sharp Park. CD 9/15.

Calif., Reedley—JUNIOR COLLEGE—Reedley School Dist. plans by Benjamin F. Lippold, 1272 Wishon St., Fresno, Junior College, **$600,000.** CD 6/22.

Calif., St. Helena—SCHOOLS—St. Helena Unified School Dist., St. Helena, **$530,000** bond election Oct. 26, schools.

▲ **Calif., Stockton** — SCHOOLS — Stockton Bd. Educ., 324 N. San Joaquin St., **$7,750,000** bond election Dec. 7, schools. CD 6/14/51.

Calif., Tulare—AUDITORIUM—Tulare Memorial District, Tulare, plans by Kenney & Adams, 2 Niles St., Bakersfield, memorial auditorium, Lindsay Hy. **$550,000.**

▲ **Del., Smyrna**—HOME—Delaware State Welfare Home, Smyrna, plans by G. Morris Whiteside, 2nd., 909 Tatnall St., Wilmington home addn. **$1,100,000.** CD 7/16/52.

Ga., Augusta—SCHOOL—Richmond Co. Bd. Educ., Augusta, plans by Kuhlke & Wade, Campbell Bldg., Long Junior High School for Negroes, **$750,000.**

Ind., Columbus—SCHOOL—City Bd. Educ., Columbus, elementary school. **$500,000.**

Md., Laurel—INFIRMARY—D. C. Govt., Construction Dpt., 499 Pa. Ave, N. W., Wash., D. C., infirmary at Child Center, **$650,000-$700,000.**

▲ **Md., Rockville**—HIGH SCHOOL—Montgomery Co. Bd. Educ., Rockville, Northwood Junior-Senior High School, Old Bladensburg Rd., Silver Spring. **$1,700,000.**

▲ **Mass., Cambridge**—HOSPITAL—City, City Hall, plans by James H. Ritchie & Assoc., 135 Clarendon St., Boston, city hospital expansion, Line St. incl. one outpatient dept., health center, dining room and cafeteria, 40-pediatric unit. **$1,500,000.** CD 7/29/52.

▲ **Mich., Detroit**—CONVENTION-EXHIBITS, etc.—City, City Hall, plans by Giffels & Vallet, Inc. & L. Rossetti, 1000 Marquette Bldg., convention and exhibits bldg. and parking facilities. **$22,900,000.** CD 4/13/51.

▲ **Mich., Mt. Clemens**—HOSPITAL—Mt. Clemens Hospital, Ben Burbridge, pres. Hospital Bd. Trustees, 100-bed, brick, steel Osteopathic Hospital to replace general hospital, **$1,500,000.**

▲ **Mich., Mount Pleasant**—SCHOOL—Mt. Pleasant Bd. Educ., Russell Le Cronier, supt. Schools defeated bonds, high school. **$1,200,000.** CD 7/29.

Mich., Paw Paw—JAIL—Bd. Supervs. Van Buren Co., Paw Paw, jail. **$500,000.**

▲ **Mich., Pontiac**—COUNTY—Oakland Co., H. Lloyd Clawson, chn. Special Comn., 1 Lafayette St., bond election Nov. 2, new county bldg., West Boulevard. **$5,000,000.** CD 8/10.

▲ **Neb., Omaha**—POWER PLANT—Omaha Public Power Dist., 17 and Harney Sts., constr. and equip. addn. to power plant. **$12,000,000.** Pioneer Service & Eng. Co., 231 S. LaSalle St., Chicago, Ill., consult. engr. A. G. Johnson, c/o owner, ch. engr. CD 8/17/51.

▲ **N. J., Trenton**—HOSPITAL—New Jersey Div. Purchases & Property, State House, plans by Kramer & Hirsch, 115 E. State St., state hospital addns., alterations. **$1,200,000.** Chester I. Duncan, Lewis Tower Bldg., Phila., Pa., consult. structural engr. CD 8/3.

Ore., Roseburg—COURT HOUSE—Douglas Co., Court House, plans by Lyle F. Glenn, Roseburg, 2 court house addns., 1 and 3 story, each 60x100 ft. **$500,000.** Myers & White, Cascade Bldg., Portland, consult. engrs.

Pa., Larchmont—HIGH SCHOOL—Marple-Newtown Joint High School Bd., Larchmont, plans by Joseph J. Wigmore, 117 S. 17 St., Phila., archt., Junior and

Senior High School addn. **$833,000.** Walker Yeomans Assoc., Inc., 117 S. 17 St., Phila., engrs. CD 622.

Pa., **Phila.**—SCHOOL—Springside School, Chestnut Hill, Phila., plans by Harry G. Stewart, 117 S. 17 St., school. **$500,000.**

▲ **S. C., Columbia**—THEATER—City and Richmond Co., Columbia, municipal theater bldg. **$1,000,000.**

▲ **Tenn., Chattanooga**—SCHOOL IMPRVS.—Hamilton Co. Bd. Educ., Court House, bond election Nov. 2, school imprvs. **$1,500,000.** CD 11/25.

▲ **Tenn., Knoxville** — SCHOOL IMPRVS. — City, bond election Sept. 23, school imprvs. **$6,000,000.** CD 5/19/52.

▲ **Tex., League City**—SCHOOLS—Clear Creek Consolidated Independent School Dist., c/o Pat H. Greene, supt., League City, plans by George & Abel B. Pierce, 2200 Welch Ave., Houston, high school between League City and Kemah; **$650,000;** elementary school, Webster, **$300,000;** Junior High School, near Webster, **$375,000;** classrooms-auditorium-gymnasium, Kemah, **$325,000.** Walter P. Moore, 2 Pinedale St., H. E. Bovay Jr., M. Esperson Bldg., Houston, consult. engrs. CD 5/12.

▲ **Utah, Provo**—INFIRMARY—Utah Co. Comn., Burton Adams, City-County Bldg., plans by Fred L. Markham & Willard C. Nelson, 45 N. University St., infirmary. **$1,000,000.**

▲ **Wash., Longview**—SCHOOLS—School Bd., Longview, bond election Nov. 2, two elementary schools, **$430,000** each; Junior College Bldg., **$215,000;** Junior-Senior High School, **$1,500,000.** CD 11/19/52 and 5/19/54.

† **Alaska, Sitka**—PIONEERS HOME—Alaska P. Wks., Dpt. Interior, Juneau, Pioneers' Home addn. **$800,000.**

Man., **Winnipeg**—MEDICAL SCHOOL—University of Manitoba, Winnipeg, plans by Moody & Moore, 295 Broadway Ave., medical school addn. **$750,000.** CD 3/9.

COMMERCIAL BUILDINGS

Calif., **Downey**—HOSPITAL—Downey Memorial Hospital, c/o Faxon & Gruys, 450 N. Beverly Dr., Beverly Hills, brick masonry 24,000 sq. ft. hospital. **$500,000.** CD 8/9.

Colo., **Wheatridge**—CHURCH DEVELOPMENT—Holy Cross Lutheran Church, 7501 W. 45 Ave., complete church development, first unit, one story chapel; second unit, outdoor chapel; third unit, addnl. Sunday School area and youth center; fourth unit, large chapel and remodeling first unit into parish hall; final work, small memorial chapel. **$500,000.** Orrie J. Holman, 4380 Wadsworth Ave., consult. engr. and archt.

▲ **Fla., Gainesville**—HOTEL—M. M. Parish, representing owner, Gainesville, hotel. **$1,500,000.**

Ind., **New Castle**—SHOPPING CENTER—Redeman Market, 14 and A Ave., shopping in connection with market between 14 and 18 Sts. on A Ave., **$750,000.**

▲ **Md., Avondale**—HOME FOR AGED—Archdiocese of Washington, 1719 Rhode Island Ave. N. W., Wash., D. C., plans by E. Philip Schreier, 1420 "K" St., N. W., Wash., D. C., Catholic Home for Aged, 19 and Eastern Aves. Approx. **$1,000,000.**

▲ **Neb., Omaha**—HOSPITAL—Methodist Hospital, 3612 Cuming St., 6 story hospital addn. **$1,000,000.**

▲ **N. J., Trenton**—APARTMENT—Troy Towers, c/o William G. Chirgotis, archt., 968 Stuyvesant Ave., Union 295-unit apartment, State St. and Rutgers Pl., **$4,000,000.**

▲ **N. Y., Brooklyn**—APARTMENTS—Kingsview Homes, Inc., 2 DeKalb Ave., plans by Brown, Guenther & Booss, 1860 Broadway, New York, four 15 story and one 14 story apartments, Myrtle and Willoughby Aves., St. Edward and Ashland Pls. **$3,000,000.** Sears & Kopf, 13 E. 37 St., New York, consult. engrs.

N. Y., **Brooklyn**—DORMITORIES—Pratt Institute, 215 Ryerson St., plans by McKim, Mead & White, 101 Park Ave., New York, Zone 17, two 4 story dormitories, 331-47 DeKalb Ave. and 164-82 Willoughby Ave. **$530,000.** CD 3/31.

▲ **N. Y., New York**—TELEPHONE EXCHANGE—Robert S. Olnick, etc., 750 Kappock St., plans by Voorhees, Walker, Foley & Smith, 101 Park Ave., Zone 17, 2 story telephone bldg. on site bounded by Broadway, 213 St., 214 St. and Tenth Ave. **$1,300,000.**

▲ **N. Y., Rockville Center**—COLLEGE BLDGS.—Molloy Catholic College for Women, c/o Beatty & Berlenbach, archts., 32 Court St., Brooklyn, 5 college bldgs., Southern State Parkway, between Hempstead and N. Village Aves. **$1,000,000.**

▲ **N. Y., West Islip**—HOSPITAL—St. Charles General Hospital, 1000 Montauk Parkway, plans by Crow, Lewis & Wick, 200 Fifth Ave., New York, hospital, Captree Parkway and Montauk Hy. **$1,000,000.**

O., **Rocky River**—OFFICE, etc.—Center West Realty Co., c/o Victor Wertheimer, Citizens Bldg., Cleveland, Zone 14, plans by Damon, Worley, Samuels & Assocs., Engineers Bldg., Cleveland, Zone 14, 3 story approx. 10,000 sq. ft. office and commercial bldg., 20950 Center Ridge Rd. **$500,000.**

Pa., **Phila.**—MEDICAL CENTER—A. F. L. Medical Center, Franklin and Thompson Sts., plans by Louis I. Kahn, 20 and Walnut Sts., medical center, **$500,000.** CD 9/1/53.

▲ **Pa., St. Davids**—SHOPPING CENTER—Owner, c/o First Mortgage Corp., 20 S. 15 St., Phila., plans by C. Frederick Wise, 253 Ellis Rd., Havertown, shopping center and parking facilities. **$15,000,000.**

▲ **Pa., Wyncote**—HIGH SCHOOL, etc.—Roman Catholic Archdiocese of Phila., 310 N. 19 St., plans by Paul

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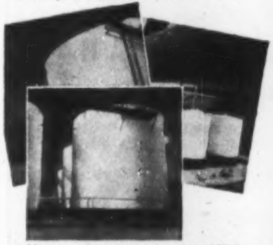

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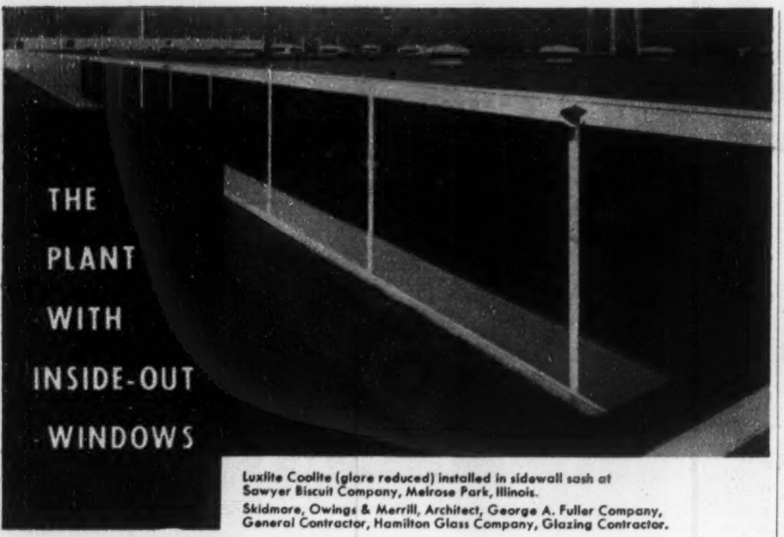

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Henon, Fox Bldg., Phila., high school, convent, rectory. $1,250,000. CD 10/3/45.

▲ **Pa., Wynnewood**—APARTMENTS—John W. Merriam Co., 123 S. Broad St., Phila., two apartments, 400-units, Penn and Wynnewood Rds. **$5,000,000.**

Va., Richmond—OFFICE, etc.—Richmond Dry Goods Co., Inc., 11 S. 7 St., plans by Carneal & Johnson, Atlantic Life Bldg., office and warehouse, **$500,000.**

Wash., Kenmore—SEMINARY—Most Rev. T. A. Connolly, Catholic Archbishop, of Seattle, 907 Terry St., Seattle, plans by J. W. Maloney, Central Bldg., Seattle, Zone 4, building for major seminarians at St. Edward's Seminary, **$700,000.**

▲ **Wash., Seattle**—BUILDING MODERNIZATION—University Properties, Inc., Cobb Bldg., Seattle, Zone 1, plans by Naramore, Bain, Brady & Johnanson, 904 7 Ave., modernizing White-Henry-Stuart Bldg. by consolidation of elevators, etc. **$1,400,000.** CD 8/20.

Wis., Wausau—HIGH SCHOOL—Wausau Catholic District, Wausau, high school. **$500,000.**

INDUSTRIAL BUILDINGS

▲ **Colo., Denver**—WAREHOUSE, etc.—Gates Rubber Co., 1001 S. Broadway, 2 story, 216,000 sq. ft. concrete warehouse and mfg. plant, **$1,000,000.** H. G. Naylor, company engr. CD 12/1/47.

▲ **Fla., Miami**—GARAGE—Miami Transit Co., Roper Bldg., Miami, bus garage. **$1,000,000.**

▲ **Fla., Palatka**—POWER PLANT—Florida Power & Light Co., 25 S E Second Ave., Miami, power plant addn. Over **$1,000,000.**

Mass., South Boston—WAREHOUSE—Stop & Shop, Inc., 393 D St., 100,000 sq. ft. concrete block warehouse, 420 D St. **$500,000,** Linenthal & Becker, 16 Lincoln St., Boston, consult. engrs.

▲ **Mich., Traverse City**—HEADQUARTERS—Consumers Power Co., 1212 Michigan Ave. W., Jackson, brick, steel, concrete, new Western Division headquarters bldg., **$10,000,000.**

▲ **Tex., Athens**—PLANT, etc.—Olive & Myers Furniture Mfg. Co., 2220 Young St., Dallas, 3 story, 650,000 sq. ft. brick, tile, concrete, steel frame furniture mfg. plant, **$1,250,000;** products warehousing, **$175,000.** Giffels & Valet, Inc., 3518 Polk St., Houston, consult. engr.

▲ **Wis., Wisconsin Rapids**—WOODROOM—Consolidated Water Power & Paper Co., Wisconsin Rapids, woodroom addn. to paper mill. **$1,300,000.**

Ont., Oshawa—MILLING UNIT—Ralston Purine Co. Ltd., 749 Joliceur St., Montreal, Que., concrete milling unit on waterfront, **$500,000.** Donald K. English, Checker Board Sq., St. Louis 2, Mo., U. S. A., engr. CD 7/14.

Que., Montreal—WAREHOUSE, etc.—Massey-Harris—Ferguson Co. Ltd., 915 King St. W., Toronto, Ont., warehouse and office, **$500,000.** CD 4/26/50.

UNCLASSIFIED

▲ **Nebraska and Wyoming**—**PIPE LINE**—Wyoming-Nebraska Pipe Line Co., Sidney, Neb., 215 mi. pipe line, 2 m.g. storage tanks at Sidney, Neb., 6 m.g. storage tanks at North Platte, Neb. **$3,000,000.**

▲ **O., Norwood (Br. Cincinnati)**—PLANT—General Motors Corp., 4726 Smith St., Norwood, modernization Chevrolet and Fisher body plants, Smith Rd., new 100x105 ft. power house and 2 story storage bldg. **$8,000,000.** CD 4/3/50.

▲ **Texas**—RAILWAY LINE—The Atchison, Topeka & Santa Fe Ry. Sys., T. A. Blair, ch. engr., 80 E. Jackson Blvd., Chicago 4, Ill. 55 mi. standard guage short-cut railway line from point south of Sanger, S.E. thru Denton, and into Dallas. **$1,500,000.**

▲ **Texas**—COMPRESSOR STATION—Trunkline Gas Co., 5650 Kirby St., Houston, 6,350 hp. compressor station at Edna. **$1,653,000.**

Washington—ELECTRICAL DISTRIBUTION LINES—Grays Harbor Public Utility District, Aberdeen, extending electrical distr. lines to north and south beaches on Pacific Ocean, Grays Harbor Co. **$500,000.**

▲ **Wash., Seattle**—LIGHTING—City, County-City Bldg., Seattle, Zone 4, bond election Nov. 2 mercury vapor street lighting sys. on arterials in areas annexed since 1948, **$460,000;** on remaining residential streets, **$4,140,000.** CD 8/16.

Wash., Seattle—PARK IMPRVS.—Park Bd., 100 Dexter Ave., bond election Nov. 2, imprv. Woodland Park Zoo, **$500,000;** parking, picnic area and boat ramps at Golden Gardens Beach **$78,000;** roadway and picnic area at Seward Park, **$110,000;** wading pool and imprvs. at Volunteer Park, **$120,000;** surf. bicycle trail, addnl. parking new boathouse, model yacht basin and shore "control" facilities for wildlife at Green Lake, **$81,500** W. C. Hall, ch. engr. CD 6/9.

▲ **Wyoming, Colorado, Kansas and Missouri**—PIPE LINE—Service Pipe Line Co., Div. of Western Pipe Line Co., 119 E. 6 St., Tulsa, Okla., 630 mi. pipe line from Fort Laramie, Wyo. to Freeman, Mo. **$1,500,000.**

† **Alaska, College**—UTILIDORS—Alaska P. Wks., Dpt. Interior, Juneau, rehabilitate and expand utilidors, fire protection, electrical distr., steam and water mains, **$567,500.**

▲ **Que., Montreal**—STOCK PENS—Canadian National Rys. ,B. Wheelwright, ch. engr., 360 McGill St., rebuilding stock pens, Pointe St. Charles Yard, near Bridge St., **$1,000,000.** CD 7/30/43.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 14 Massachusetts
STREETS AND ROADS
September 13 Connecticut
September 14, 21 Massachusetts

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **The Lane Constr. Corp.**, 965 E. Main St., Meriden, Conn., LB, **$2,835,708**, est. $3,000,000. Manhan Dam, west branch of Manhan River, Southampton, HOLYOKE, MASS. City Bd. Water Comrs., City Hall, Holyoke, Mass. Bids Aug. 27. CD 6/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **F. H. McGraw & Co.**, 780 Windsor St., Hartford, Conn., CA, **$2,000,000**. TANNERY, SOUTH PARIS, ME. A. C. Lawrence Leather Co., Div. Swift & Co., Union Stockyards, Chicago, Ill. Bids Aug. 10. CD 8/11.

▲ **Bartlett-Brainerd Co.**, 589 New Park Ave., Hartford, Conn., CA, **$2,000,000** MOTHERHOUSE, CHAPEL and NOVITIATE, ENFIELD, CONN. Felican Sisters of Our Lady of The Angels Province, 140 Farmington Ave., Hartford, Conn. Bids July 26, awarded Aug. 25. CD 7/20.

▲ **Housing Auth. of City of Stamford**, 100 Mayano Lane, Stamford, Conn., rejected bids Aug. 10, HOUSING Proj. MR-55, STAMFORD, CONN., LB **$2,659,000.** Will re-advertise. CD 8/13, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 16 New Jersey September 17 Pennsylvania
STREETS AND ROADS
September 16 New Jersey September 16 New York
September 17 Pennsylvania

SOON LETS CONTRACT—BUILDINGS

▲ **N. J., Camden**—DEPARTMENT STORE—Lit Brothers, 8 and Market Sts., Phila., Pa., soon let contract, department store, $2,500,000. Thalheimer & Weitz, 1325 Walnut St., Phila., Pa., archts. CD 8/18.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., North Office Bldg., Harrisburg,
C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, Md., LB **$3,817,400**, const. 5.33 mi. Contr. No. 508 of Northeastern Exten. of Turnpike, Sect. 35-G, in Milford Twp., Bucks Co. and Lower Milford Twp., Lehigh Co. Bids Aug. 31. CD 8/13.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., Harrisburg,
Badgett Mining & Stripping Corp., Madisonville, Ky., CA **$2,388,986**, const. 4.11 mi. Northeastern Extens. of Turnpike, in Kidder Twp., Carbon Co. Bids July 28. CD 7/30, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Lawrence D. Elkind**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$6,000,000.** 620 HOUSES and STORE CENTER, 263-acre tract, Veterans Memorial Hy. and Sunken Meadows Hy., COMMACK, N. Y.

▲ **F. D. Rich Co., Inc.**, 322 Main St., Stamford, Conn. CA **$2,527,000**, est. $2,500,000. State OFFICE BLDG., Market St., E. Washington and S. State Sts., Spec. 1800-18001-18002-18003 and 18004, SYRACUSE, N. Y. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids July 29. CD 8/9, under LB.

▲ **G. L. Matter & Son**, New Castle, Del., CA, **$5,000,000.** 450 unit RESIDENTIAL DEVELOPMENT, Brookside Park, NEWARK, DEL. S. L. Development Co., Att. Arnold Matter, New Castle Ave., Rosehill, New Castle, Del.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 22 Louisiana September 24 Alabama
September 30 Florida
STREETS AND ROADS
September 22 Louisiana September 24 Alabama

BIDS ASKED—BUILDINGS

▲ **Tenn., Bolivar**—TREATMENT—BA 10/1—State of Tennessee, Nashville, receiving and treatment bldg., Western State Hospital. $2,000,000. J. F. Smith & Assocs., Goodwyn Institute Bldg., Memphis, archts. CD 3/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Wylie N. Jackson**, P.O. Box 110, Miami, Fla., LB, **$794,700**, Div. A, sewage treatment plant;
Intercounty Constr. Co., P.O. Box 1640, Miami, Fla., LB Div. B, Part (A), **$459,970**, LB, **$1,166,400** Part (B); gravity and pressure sewers;
Cleary Bros. Constr. Co., P.O. Box 6815, West Palm Beach, Fla., LB, **$637,178**, Part C, HOLLYWOOD, FLA. City, Hollywood, Fla. Bids Aug. 24. CD 2/2.

▲† **Bruce Constr. Corp.**, 1118 N.E. 2 Ave., Miami, Fla., CA, **$4,867,605**, dormitories, mess halls, BOQ, etc. Inv. 55-7, Homestead Air Force Base, HOMESTEAD, FLA. U. S. Eng., P. O. Box 4870, Jacksonville, Fla. Bids Aug. 24. CD 8/26, under LB.

▲† **W. T. Price Dredging Corp.**, S.W. 27 Ave., Miami, and **Blythe Bros. Co.**, P.O. Box 989, Charlotte, N. C., LB, **$3,043,368**. airfield paving, railroad spur, Homestead Air Force Base, Inv. 55-2, HOMESTEAD, FLA. U. S. Eng., P.O. Box 4970, Jacksonville, Fla. Bids Aug. 17. CD 7/6.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **West Virginia Eng. Co., Inc.**, Newport News, Va., LB, **$10,657,000.** BASIC SCIENCES bldg., MORGANTOWN, W. VA. Bd. Governors West Virginia University, Morgantown, W. Va. Bids Aug. 31. CD 7/29.

▲ **Batson-Cook Co., Inc.**, West Point, Ga., CA Approx. **$3,000,000.** PLANT addn., TAYLORS, S. C. Southern Bleachery & Print Works, Taylors, S. C. CD 9/1, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,
L. A. Davidson Co., 213 St. Joseph St., Lansing, Mich., CA, **$4,558,729**, est. $4,700,000. c. conc. with curb, gutter, John C. Lodge Expressway, BUI-82-128 C 11 BUI 82-128 C 12 (BUI 404-64), Detroit, Wayne Co.; CA, **$928,128**, grading, drainage and water mains on M-20 U 9-48 C1-U U-9-48, C2-U (U 4171) Bay City, Bay Co. Bids Aug. 18. CD 8/24, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Huber, Hunt & Nichols**, 2450 S. Tibbs Ave., Indianapolis, Ind., CA, **$3,958,050**, 5 story, rein.-con., brick, stone HOSPITAL, 16 St. and Ritter Ave., INDIANAPOLIS, IND. Hospital Development Assn., Inc., R. A. Efroymson, pres. Bd., 615 N. Alabama St., Indianapolis 4, Ind. Bids Aug. 11, awarded Aug. 27. CD 8/17, under LB.

▲ **Central Management, Inc.**, 10 W. Ohio St., Indianapolis, Ind., CA, **$1,500,000.** reconstr. FACTORY and 10 story BATCH MIXER, MUNCIE, IND. Ball Brothers Glass Co., 12 and Macedonia Ave., Muncie, Ind.

▲ **Sullivan-Smith, Inc.**, 22963 West Outer Dr., Dearborn, Mich. Owner Builds, **$15,000,000.** 600 brick HOMES, Westchester Village Development, BLOOMFIELD, MICH.

▲ **John Ebdon**, 36960 West 9-Mile, Farmington, Mich., Owner Builds, **$2,500,000**, 70 HOMES, 110-acre Heather Hills Development, FARMINGTON, MICH.

▲ **Paul Le Bost**, 19200 James Couzens, Detroit 35, Mich. Owner Builds, **$8,600,000.** 850 brick ranch HOUSES, Willow Brook Village Development, 10-Mile Rd., FARMINGTON, MICH.

▲ **Fred E. Greenspan Building Co.**, 16194 Wyoming St., Detroit, Mich., CA, **$2,700,000**, 260 brick ranch HOUSES, Green-Span Gardens, West Chicago and Kinloch Sts., REDFORD, MICH. F. L. Braun, (agent) 16194 Wyoming St., Detroit, Mich.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 16, 17 Kansas
STREETS AND ROADS
September 16, 17 Kansas September 23 Montana

BIDS ASKED—BUILDINGS

▲ **Kan., Topeka**—OFFICE—BA 9/16—State Dpt. Admin., State House, state office bldg. $8,350,000. John Brown, c/o owner, state archt. CD 5/3.

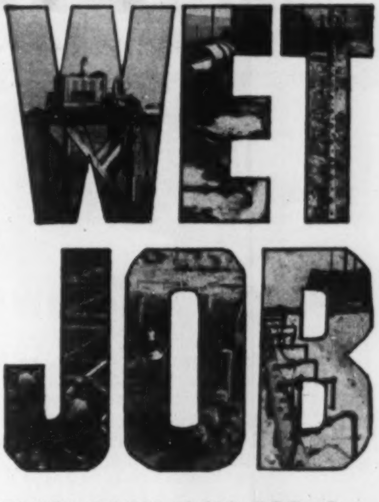
† **Tex., Fort Hood**—SHOP—BA 9/21—U. S. Eng., 100 W. Vickery St., Fort Worth, Ordnance Repair Shop, drilled pier fdn., Inv. No. ENG-41-443-55-13. $850,000-$2,250,000. CD 9/15/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Weymouth Constr. Co.**, P. O. Box 319, Memphis, Tenn., and **Ben M. Hogan Co.**, 1100 Fairview St., Little Rock, Ark., CA, **$3,291,182**, est. $3,692,653. Sch. A, (rigid paving) or runway, 145,000 sq. yd. new c. conc. and 440,000 sq. yd. overlay pavement, Blythe-

IF IT'S A



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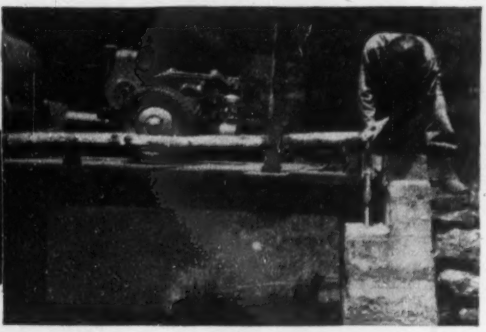

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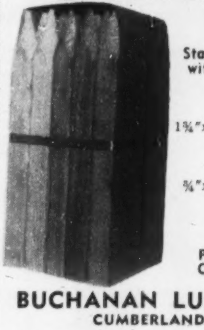

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–18"	11.50	10.50
–24"	16.00	14.50
–36"	24.00	22.50
¾"x1¾"–12"	6.15	5.60
–15"	6.60	6.00
–18"	7.50	6.50
–24"	11.00	10.00
–36"	16.00	14.00

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ville Air Force Base, ENG-03-055-55-11, BLYTHEVILLE, ARK. U. S. Eng., P. O. Box 867, Little Rock, Ark. Bids Sept. 1. CD 7/29.

▲† **Imperial Paving Co.**, 700 E. Grand St., Oklahoma City 4, Okla., LB **$2,520,790**, est. $2,766,860, runway extens., Tinker Field, ENG-34-066-55-5, OKLAHOMA CITY, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Aug. 19. CD 8/3.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Mead & Mount Constr. Co.**, 250 Railway Exchange Bldg., Denver, Colo., CA, **$1,893,030**, est. $2,000,000. 12 one story buildings COUNTY JAIL, DENVER, COLO. City and Denver Co., City-County Bldg., Denver, Colo. Bids Aug. 18, awarded Aug. 25. CD 8/23, under LB.

▲ **H. B. Wolff & Co.**, Security Bldg., Denver, Colo., Owner Builds. **$2,500,000**, HOUSING DEVELOPMENT, incl. 177 new homes to Krisana Park, DENVER, COLO.

▲ **Morrison & Morrison**, 1650 Broadway, Denver, Colo., Separate Contracts, **$5,000,000**, 500 HOMES on Southern edge of exclusive Hilltop area; **$5,000,000**, 300 HOMES west of Fairmount Cemetery, DENVER, COLO.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
September 22 California

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Young & Smith Constr. Co.**, Beason Bldg., Salt Lake City, Utah, and **Thorn Constr. Co.**, Box 111, Springville, Utah, LB **$2,283,734**, est. $2,016,410, Schedule 1, gateway canal for Weber Basin Proj. Spec. DC 4207, UTAH. Bureau Reclamation, Dpt. Interior, 204 24th St., Ogden, Utah. Bids Aug. 24. CD 7/15.

▲† **Jacobsen Constr.**, Box 954, Salt Lake City, Utah, LB **$2,360,370**, hangar for cleaning and painting of aircraft, HILL AIR FORCE BASE, UTAH. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Aug. 19. CD 8/4.

▲† **P. J. Walker Co.**, 3900 Whiteside Ave., Los Angeles, Calif., CA, **$1,581,846**, est. $1,116,000, hydrodynamics test facilities, Edwards Air Force Base, ENG-04-353-55-4, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 25, awarded Aug. 26. CD 8/31, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **K. E. Parker**, 125 S. Park St., San Francisco, Calif., CA, **$1,381,000** general contract, HALL of JUSTICE, REDWOOD CITY, CALIF. San Mateo Co., Court House, Redwood City, Calif. Bids Aug. 17, awarded Aug. 24. CD 8/25, under LB.

▲ **Stolte, Inc.**, 8251 San Leandro St., Oakland, Calif., CA, **$1,346,221**, 4 story, penthouse, COURT HOUSE, SACRAMENTO, CALIF. Sacramento Co., Court House, Sacramento, Calif. Bids Aug. 18, awarded Aug. 24. CD 8/25, under LB.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Canadian Allis-Chalmers Ltd.**, 1520 Mountain St., Montreal, Que., CA, generators;
Mannix Ltd., 604 Northern Bldg., Edmonton, Alta., CA, general contract, hydro-electric power project on Kananskis River, Kananskis, ALBERTA. Calgary Power Co. Ltd., Calgary, Alta. Total est. **$3,000,000**. CD 6/18.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Anglin-Norcross Quebec Ltd.**, 892 Sherbrooke St. W., Montreal, Que., LB, **$2,388,934**, 6 story L-shaped, 156x158 ft., steel, sandstone FEDERAL BLDG., Queen St., CHARLOTTETOWN, P.E.I. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Aug. 25. CD 7/6.

▲ **J. L. E. Price Ltd.**, 680 W. Sherbrooke St., Montreal, Que., CA, **$5,000,000** HOSPITAL remodeling, addns., MONTREAL, QUE. Childrens Memorial Hospital Bd., 1615 Cedar Ave., Montreal, Que. MacDougall & Assocs., 1235 Mc Gill College Ave., Montreal, Que., archts. CD 4/20/51.

ALASKA

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Pacific Alaska Contractors**, 1515 Center St., Tacoma, Wash., LB **$1,032,111**. 2 story, rein.-con., steel HIGH SCHOOL addn., 1 story, rein.-con. and frame ELEMENTARY SCHOOL addn., Proj. Aaa-50-A-45, KODIAK, ALASKA. Alaska P. Wks., Dpt. Interior, 123 Third St., Juneau, Alaska. Bids Aug. 25. CD 7/26.

(Proposal Advertisements see pp. 73 to 76)

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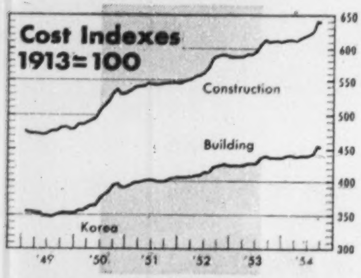
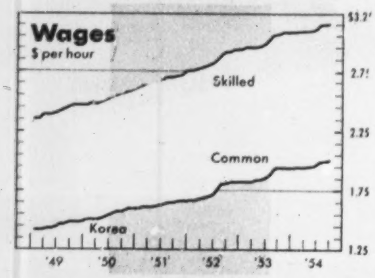
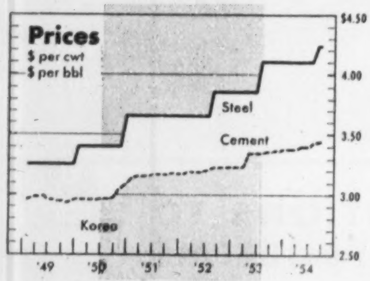
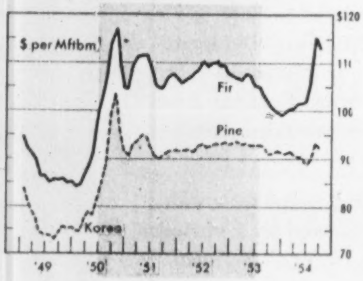
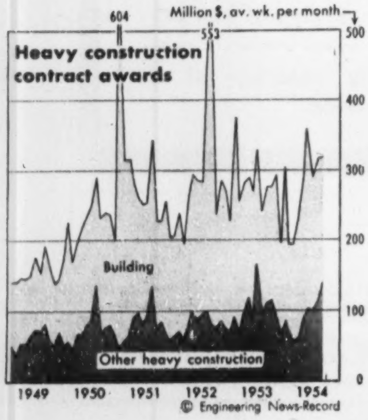
SEPTEMBER CONSTRUCTION SCOREBOARD











	1954 Sept.	% Change from last Month	Year
ENR INDEXES (1913 = 100), 20-cities' average			
Construction Cost	640.68	−0.2	+4.9
Building Cost	454.28	−0.3	+4.2
WAGE RATES, 20-cities' average			
Common	$2.016	+0.3	+4.7
Skilled (aver. 3 trades)	3.169	+0.7	+3.1
Bricklayers	3.450	+0.4	+2.7
Structural Ironworkers	3.131	+1.0	+3.5
Carpenters	2.926	+0.6	+3.2
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	3.457	+0.3	+3.9
Structural Steel, (3-mill aver.), per cwt	4.250	0.0	+3.7
Sand, per ton	2.251	+0.4	+3.1
Lumber, 2x4 Fir, per M. ft. bm	113.000	−2.2	+11.1
Lumber, 2x4 Pine, per M. ft. bm	92.300	−1.0	+1.5
Common brick, per M	33.237	0.0	+1.4
Ready-mixed concrete, per c. y	12.199	+0.6	+2.2
Structural Clay Tile, 3x12x12 per M	161.938	−0.1	+1.5

CONTRACTS AWARDED (Millions)	1954 August	8-Mos. (34-weeks)	% Change from '53 August	8-Mos. (35-week)*
Total U. S. (ENR reported)	$1,271.0	$9,349.6	+14.4	−6.4
Private	792.6	5,357.5	+31.1	−5.8
Public	478.4	3,992.1	−5.6	−7.1
Federal	67.4	808.0	−27.0	−21.9
ENR Volume Index, '13 = 100	525	482	+7.8	−7.
NEW CAPITAL (Millions)				
Total	1,371.7	8,544.5	−40.9	−0.2
State & Municipal Bond Sales	242.8	3,658.7	−9.7	+19.7
Corporate Security Sales	131.2	2,028.0	−76.9	−35.1
Federal (non-federal work)	45.6	751.3	−92.2	−9.6
Federal (federal work)	952.1	2,106.5	+5.9	+35.9

* Computed on weekly average

MATERIAL SHIPMENTS & LABOR SUPPLIES (millions)	1954 June (J) July (Jul)	6-Mos. (6) 7-Mos.(7)	% Change from '53 Mo.	Yr-Cum.
Cement, bbls, Bu. of Mines	28.632(J)	122.228(6)	+8.5	+2.9
Fabr. Struc. Steel, tons AISC	.244(Jul)	1.866(7)	+6.1	+4.2
Lumber, mil. ft. bm., NLMA	3.293(J)	18.614(6)	−3.8	−6.8
Lumber Prod., mil. ft. bm., NLMA	3.116(J)	18.707(6)	−9.3	−4.1
Contract Const. Employ., BLS	2.819(Jul.)	2.548(7)†	+1.8	+0.6

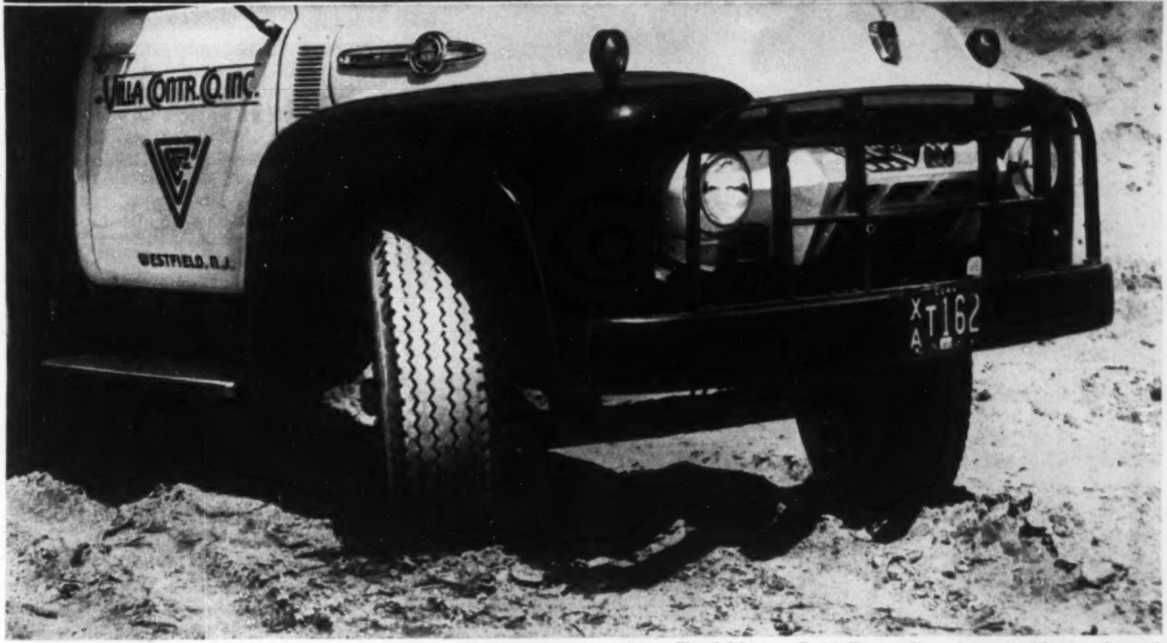
† Average

ENR CONSTRUCTION & BUILDING COST INDEXES IN 21 CITIES (1913 = 100)

	Construction Cost Sept. '54	June '54	Building Cost Sept. '54	June '54		Construction Cost Sept. '54	June '54	Building Cost Sept. '54	June '54
Atlanta	474	458	400	392	Los Angeles	665	640	448	433
Baltimore	573	548	448	423	Minneapolis	697	681	491	473
Birmingham	488	465	409	386	Montreal	526	513	391	393
Boston	669	675	448	438	New Orleans	528	516	435	422
Chicago	734	693	467	449	New York	742	732	526	516
Cincinnati	641	630	444	434					
Cleveland	738	731	458	451	Philadelphia	691	681	516	503
Dallas	487	465	405	390	Pittsburgh	666	642	475	469
Denver	633	597	468	443	St. Louis	684	669	473	457
Detroit	729	702	467	455	San Francisco	631	617	423	407
Kansas City	661	645	466	450	Seattle	682	665	419	413

For quarterly indexes Sept. '48 to Sept. '53 see October 8, 1953 ENR, page 93.

ANOTHER WAY YOU SAVE WITH FORD *TRIPLE* ECONOMY



WATCH OUT FOR KIDS!

Ford *Master-Guide* Power Steering provides boulevard steering ease even under rough off-road conditions.

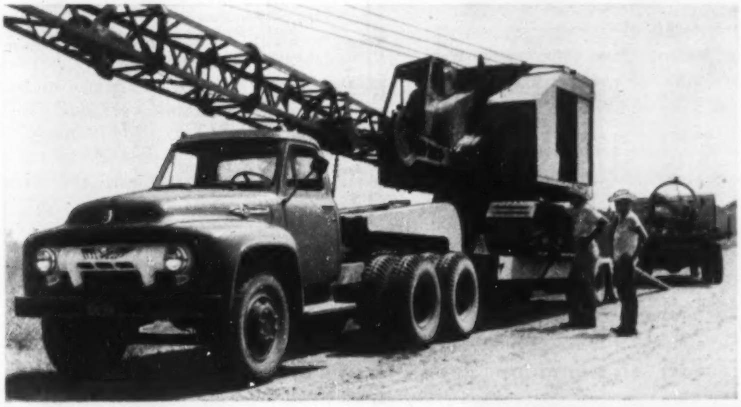
Now! Steering effort cut 75%

New Ford *Master-Guide* Power Steering reduces manual effort as much as 75%, cuts road shock, helps driver get more work done!

Ford, pioneer in driver comfort with the *Driverized* Cab, now offers Power Steering for still greater ease of control. New *Master-Guide* is standard on new Tandem-Axle models with *Cargo King* V-8 engines, available at extra cost on most other Big Jobs.

Master-Guide practically frees the steering wheel from tiring road shock. A full-time system, it supplies up to 75% of the effort required for steering . . . a real boon in parking, maneuvering, or off-road driving. By reducing driver fatigue, it increases work output and lowers your over-all trucking costs.

For complete information, see your Ford Dealer *today!* Or write: Ford Division, Ford Motor Co., Dept. T-11, Box 658, Dearborn, Michigan.



Power Steering is standard on this new Ford T-800 Tandem-Axle Big Job. Factory-built for low first cost, the T-800 hauls 60,000 lbs. GCW, carries 40,000 lbs. GVW. Short-Stroke, Low-Friction 170-h.p. *Cargo King* V-8 delivers up to 41% more horsepower per cubic inch displacement than other engines in its class, for gas-saving efficiency.

SAVE WITH ALL THREE!

1. Gas-Saving Power!
2. Driver-Saving Ease!
3. Money-Saving Capacities!

And . . . Ford Trucks last longer, too!

FORD
TRIPLE ECONOMY
TRUCKS

Construction awards keep climbing in August

Volume of private work helps push total to second highest August on record. Federal work, private housing are down

If you judge by construction awards, the U.S. economy has already passed through the "readjustment" that started last fall—and is moving up again.

Heavy construction contracts reported to ENR in August were the second highest on record for the month. The record was set in August, 1952, when there was a single Atomic Energy Commission contract for $1.2 billion. Exclude that, and August 1954 would be a record.

• A big quarter—Furthermore, the signs indicate that contracts in this third quarter will be second only to the same period in 1952, when there were $2.2 billion of AEC contracts. In the first two months of the current quarter, awards totaled more than $2.8 billion, or 20% more than in the same months of 1953. This pickup in tempo of awards, on top of the all-time high second quarter, shows the tremendous strength of the 1954 construction boom.

True, part of the impetus behind the August showing was provided by two unusually big contracts—a $100-million one for a utility and a $160-million award for a pipeline. Yet there is a tremendous backlog of more projects of these types that will be moving into the contract state in the next few years.

Total awards in August were $1,271 million. On an average weekly basis—August had four weeks and July five—awards were up 1% from July and 14% above a year ago. Private awards averaged $198 million per week, the best August on record. State and municipal volume averaged $103 million, a little lower than July and slightly under the all-time August high set last year. Federal awards dropped sharply to less than half the July rate, after four months of successive gains. It was the worst month for federal work since March, 1954.

• Gap narrows—The heavier volume of private work and the sustained level of state and municipal contracts during August helped narrow the gap between total volume of awards this year and in 1953. For the first eight months, 1954 trails last year by only 6% of the basis of average weekly volume. This compares with a 14% decline as of the end of the first half and a 34% drop at the end of the first quarter.

• Private work—Industrial building, pipelines, and commercial buildings sparked the rise in private awards during August. Their gains more than offset a sharp drop in private housing contracts.

Industrial awards averaged more than $56 million per week, helped considerably by a single $100-million award by Public Service Electric & Gas Co. of Newark, N. J. This was the second best weekly average for this year, but it was a little below the rate in August, 1953.

Commercial awards climbed to a weekly average of $32.3 million, 50% above the July average, and the best showing for any month so far this year. This average volume was 11% above volume in August, 1953.

The private unclassified category (mostly pipelines) has been lagging far behind 1953 volume. However, a $160-million pipeline award for Pacific Northwest Pipe Line Corp. pushed volume to the best level since July, 1950.

Average weekly awards for private housing were half the high July volume, although they were 47% above August of 1953.

• Public work—Highway awards, the most important category of public construction, were off 12% from July's high volume. By comparison,

ENGINEERING CONSTRUCTION CONTRACTS—AUGUST 1954

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000*

Four Weeks—Thousands of Dollars (000 Omitted)

	August, 1954							U. S. Cumulative Eight Months		% Change	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1954 (34 weeks)	1953 (35 weeks)	'53 to '54 Av. Wk.	August 1954
Public Works											
Waterworks	559	7,255	1,809	1,602	8,041	3,245	**22,511**	**149,664**	168,837	− 9	1,294
Sewerage	794	2,091	3,476	8,100	6,529	2,530	**23,520**	**246,814**	274,438	− 7	72
Bridges	4,212	17,713	5,867	11,212	6,158	8,457	**53,619**	**315,186**	437,869*	−26	2,810
Earthwork and drainage	92	2,292	1,375	738	4,933	6,096	**15,526**	**180,507**	282,291	−34	1,076
Streets and roads	8,031	41,264	28,573	29,888	34,566	16,613	**158,935**	**1,194,369**	1,196,308	+ 3	6,065
Public buildings, residential	....	19,073	....	3,629	635	....	**23,337**	**164,258**	312,901	−46	3,400
Other public buildings	8,602	28,108	21,434	23,157	19,995	19,818	**121,114**	**1,158,890**	1,167,207	+ 2	11,880
Unclassified	3,305	4,413	9,480	15,433	19,290	7,892	**59,813**	**582,403**	585,173	+ 2	3,810
Total public	**25,595**	**122,209**	**72,014**	**93,759**	**100,147**	**64,651**	**478,375**	**3,992,091**	**4,425,024***	**− 7**	**30,407**
Federal government (included in above classifications)	2,584	8,482	13,426	13,485	15,864	13,511	**67,352**	**807,983**	1,065,175	−22	7,141
Private											
Bridges	....	....	....	....	....	....	....	**6,650**	7,188	− 6	....
Industrial buildings	12,813	127,239	24,455	29,174	23,726	7,781	**225,188**	**1,276,979**	1,882,951	−29	21,510
Mass housing	3,750	68,155	16,727	46,057	64,481	22,439	**221,609**	**2,780,469**	2,449,645	+17	58,062
Commercial buildings	7,384	46,266	9,961	36,546	26,032	3,157	**129,346**	**850,196**	840,385	+ 4	4,464
Unclassified	350	....	916	2,530	112,919	99,718	**216,433**	**443,246**	674,640	−32	250,769
Total private	**24,297**	**241,660**	**52,059**	**114,307**	**227,158**	**133,095**	**792,576**	**5,357,540**	**5,854,809**	**− 6**	**334,805**
Total Engineering Construction:											
August, 1954—4 weeks	**49,892**	**363,869**	**124,073**	**208,066**	**327,305**	**197,746**	**1,270,951**	....	....	....	**365,212**
July, 1954—5 weeks	70,931	385,673	237,958	268,513	408,573	203,338	**1,574,986**	....	....	....	176,062
August, 1953—4 weeks	38,676	210,285	165,389	288,905	221,357	186,601	**1,111,213**	....	....	....	81,359
Eight Months—1954	**493,968**	**2,431,601**	**1,213,067**	**1,940,693**	**2,142.285**	**1,128,017**	....	**9,349,631**	....	**− 6**	**1,153,475**
Eight Months—1953	452,720	2,287,855	1,865,249	2,270,503*	2,151,074	1,252,432	....	....	10,279,833*	....	715,216
% Change '53 to '54 (Av. Wk.)	+12	+9	−33	−12	+3	−7	....	....	....	....	+66

* Revised.

however, August highway contracts were 39% above the same 1953 month. Public buildings other than housing—the other major public works category—were down from July and also lower than August of last year.

Waterworks contracts were higher than in July, though a little less than the high volume of a year ago. Bridge contracts held close to July's fast pace, but were much lower than a year ago. Other types of public works fell off in August, reflecting in part the lower volume of federal work.

• **Regions**—When you look at contract awards by regions, New England continues to show the greatest benefits from the boom. Volume there is 12% ahead of last year. However, the Middle Atlantic region is continuing to increase its lead over last year's volume; it is now 9% ahead. And business in the Mid-West and in the West-of-Mississippi continued at July's high level. Contracts awarded in the latter region are for the first time ahead of the same 1953 period.

In the Far West, the situation has improved slightly, with total awards so far 7% behind 1953, as compared with 10% at the end of July. Volume continues to be off sharply in the South, where awards are down 33% from last year.

Decline in lumber prices sends cost indexes down

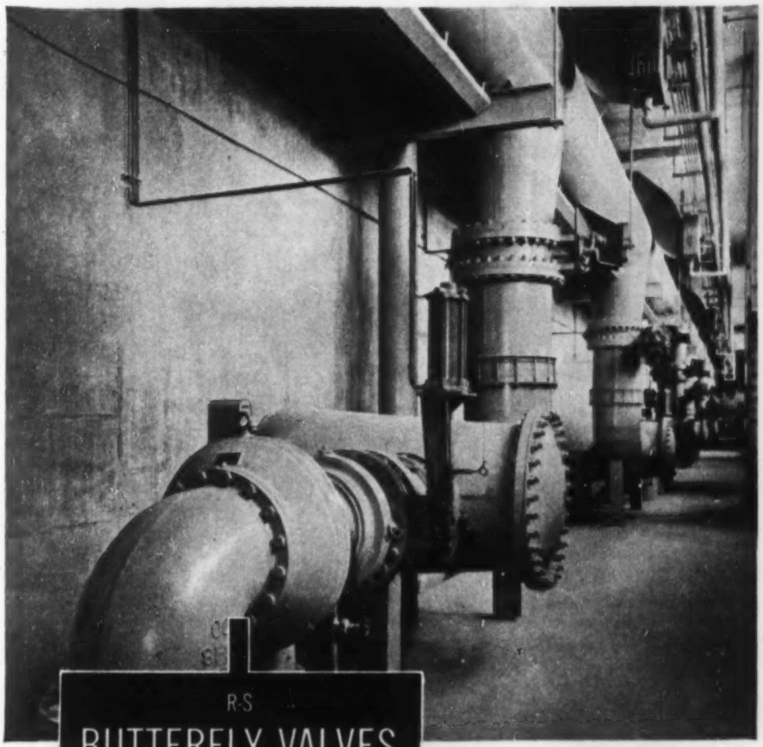
With most of the mills in the Pacific Northwest back at work, the price of Douglas fir 2x4's in 20 cities dipped 2.2% below the July level. However, fir prices were still well above the pre-strike level. Southern pine 2x4 prices, which had also increased due to the strike-induced shortage, dipped 1% in August.

The decline in lumber prices offset scattered wage increases reported in seven cities and a cement price rise in one city this month. These price and wage movements combined to pull the ENR 20-cities Construction Cost Index down slightly to 640.68 (1913 = 100) for September. That's 0.2% lower than the all-time record set in August, and 4.9% above September, 1953.

The Building Cost Index also was down this month. The drop was 0.3% from the August high to 454.28 (1913 = 100). This index is 4.2% above the level of a year ago.

Fir prices still average about 10.2% above the pre-strike level, pine prices about 3.6% higher. In two cities, Los Angeles and Cincinnati, prices are back to the pre-strike level.

While costs have gone up much faster this year than last year—largely



R-S
BUTTERFLY VALVES

San Jacinto Project uses 65 large R-S Butterfly valves

CITY OF HOUSTON SAVES $124,000 WITH DROP-TIGHT RUBBER-SEATED VALVES

Choosing R-S Rubber-Seated Butterfly Valves* enabled Freese, Nichols & Turner, Consultants on the San Jacinto River project, to save $124,000 for the City of Houston. Use of 65 of these valves for all low-pressure service gave a substantial space reduction and the direct, in-place cash savings over gate valves. SMS cone check valves were also chosen for pump discharge service.

Positive closure in R-S Rubber-Seated Valves is obtained by wedge-type closure of the disk within a one-piece rubber seat. Tough, flexible rubber seals the entire disk seat—including the area around the shaft bosses. Supervised testing of a six inch R-S Rubber-Seated Valve proved that after 6,000 closings the valve was still giving positive shutoff at 100 psig water.

These valves are the product of over 75 years of design and engineering experience in the hydraulics field. To find out more about our complete line—R-S Butterfly, Rotovalves and Ball Valves—write to S. Morgan Smith Company, York, Pennsylvania.

**Approved and accepted by the A.W.W.A., Seattle Convention, 1954.*

Hydraulic Turbines
Pumps
Gates & Hoists
Trash Rakes
Accessories
HYDRODYNAMICS
Rotovalves
Ball Valves
Butterfly Valves
Free-Discharge Valves
Controllable-Pitch Ship Propellers

SMS
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due to the lumber strike—they haven't increased as fast as they did in the same 1952 period. Back then, the Construction Cost Index jumped 7.0%, compared with 4.8% this year, and the Building Cost Index rose 4.6%, compared with 4.3%.

Justice Dept. gives score on FHA fraud convictions

Since the start of 1953, the Justice Department has obtained 74 criminal indictments and 67 convictions for offenses in connection with Federal Housing Administration programs. About 136 individuals were involved.

Most of the cases, according to the Justice Department, took place before 1953. And most of them involved false loan documents used to in the Title I home-improvment program. The Title I offenses included documents certifying improvements on houses which did not exist; loans for improvements which were never made; and cash rebates to home owners.

According to the Justice Department, many housing cases under investigation involved former public officials.

Business briefs . . .

- **Kansas Turnpike Authority** expects to sell $160 million in bonds Oct. 1 to finance its projected 236-mi turnpike from Kansas City, Kan., to Wellington on the Oklahoma line. Since much of the engineering is already done, construction will begin shortly after sale of the bonds.

- **Ordnance job**—The Army will spend $46 million on a two-year rehabilitation of its ordnance plant at Sylacauga, Ala.

- **Pittsburgh Plate Glass** will build a $34-million plant near Cumberland, Md. According to company officials, it will include brand-new features for producing plate glass.

- **Food Fair Stores, Inc.** expects to open about 20 new units within the next year, and add another 30 within the next two years, according to president Louis Stein.

- **Turnpike attracts industry**—A $50-million development, including a small manufacturing center and a truck terminal, is planned along the Ohio Turnpike in Strongsville, near Cleveland.

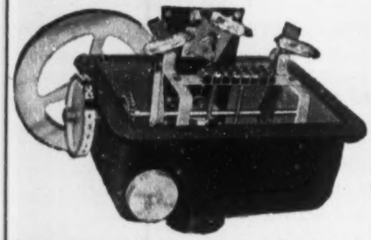
- **H. K. Porter Co., Inc.**, Pittsburgh, has sold its Buffalo steel division to Rochester Iron & Metal Co. Among other products, the plant makes reinforcing bars.

Imperial
THE *finest* TRACING CLOTH

Imperial is known in drafting rooms all over the world as the traditional quality tracing cloth.

With the background of decades of experience, its makers have pioneered in modern improvements to maintain Imperial as the finest tracing cloth made.

Program Control



RF2 A 2-pump Roto-Trol with built-in Alto-Trol. Operates each pump on alternate starting cycles — for equal use and wear. Float controlled. Depth indication optional — extra.

There's a *ROTO-TROL* best adapted for the requirements of each installation—from 2 to 16 pumps operated by one float. Any stopping and starting sequence required. Also for single or multi-pump installations for hydro-pneumatic or pressure tanks. Full program control. Dependable for one-third of a century.

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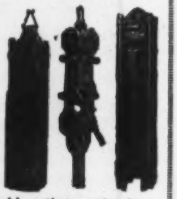
WATER LEVEL CONTROLS DIVISION OF

Healy-Ruff Company

763 Hampden Ave. St. Paul 14, Minn.

McKIERNAN-TERRY

Wide Range of
PILE
HAMMERS
and
EXTRACTORS



Complete standardised line of 11 double-acting hammers, 5 single-acting hammers and 2 double-acting extractors.

Write for free descriptive Bulletins.

Also builders of coal and ore bridges, bulk material unloaders, bridge operating mechanisms, hoists and marine equipment, and specially designed machinery.

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13 Park Row New York 38, N. Y.

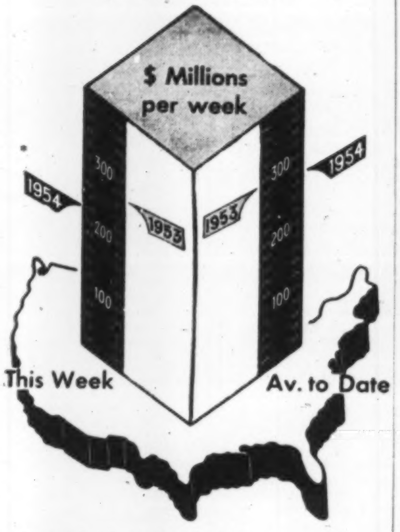
PILES

CAST-IN-PLACE
SECTIONAL PIPE
COMPOSITE
STEEL H-PILE
TIMBER
DRIVEN FOR EVERY CONDITION
FOR EVERY STRUCTURE

MacArthur Concrete Pile Corp.
18 East 48th Street New York 17, N. Y.
New Orleans Cincinnati Pittsburgh
PILE DRIVING CONTRACTORS SINCE 1910

Activity This Week

As reported to ENR
(In millions of dollars)



Amount of contracts let

	This Week*	Cumulative 36 wks 1954	Cumulative 36 wks 1953	% chge
Federal	$28.6	$862.8	$1,098.0	—21
State and Municipal ...	84.1	3,399.3	3,433.9	—1
Total public....	112.7	4,262.1	4,531.9	—6
Total private...	108.0	5,684.9	6,021.5	—6
U. S. total.....	$220.7	$9,947.0	$10,553.4	—6

Contracts by type of work

	This Week*	1954	1953	% chge
Waterworks	$2.3	$155.8	$171.4	—9
Sewerage	8.2	263.1	282.2	—7
Bridges	6.0	341.6	452.4	—24
Highways	37.6	1,295.3	1,229.0	+5
Earthwork, Waterways ...	2.1	191.6	293.3	—39
Buildings:				
Public, excl. hsg.	29.9	1,229.6	1,192.5	+3
Housg., public.	1.5	167.0	313.8	—47
Housg., private	56.5	2,979.9	2,553.5	+17
Commercial ..	22.5	915.7	858.3	+7
Industrial ...	18.0	1,323.1	1,922.2	—31
Unclassified	36.1	1,084.3	1,284.8	—16
Total	$220.7	$9,947.0	$10,553.4	—6

NOTE: Minimum size projects included are. Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

* 4 day week.

New capital for construction

(millions of dollars)

	Week of 1954	Cumulative 355 Wks 1954	Cumulative 355 Wks '53-'54
Corporate securities......	$33.0	$2,061.0	—36
State and municipal:			
All except housing.....	50.2	3,617.9	+23
Housing	...	91.0	—57
Federal loans	2.5	80.9	—4
Federal aid	...	673.0	—13
Total non-federal	$85.7	$6,523.8	—10
Federal appropriations:			
in U. S.............	$...	$2,073.3	+32
Outside U. S..........	...	33.2	+15
Total new capital........	$85.7	$8,630.2	—2

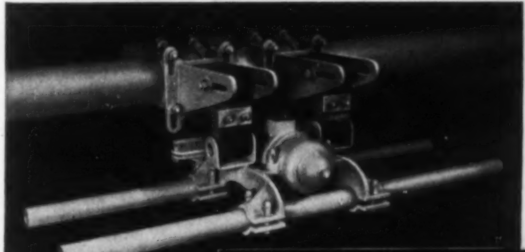
ENR cost and volume indexes, 1954

		Base years = 100 1913	1926	1949
Construction cost	9/2†	640.68	307.97	134.31
	7/29†	642.13	308.63	134.60
Building cost	9/2†	454.28	245.57	129.13
	7/29†	455.54	246.23	129.48
Volume	August	525	213	152
	July	547	222	158

† Official monthly indexes for September & August
For addit. cost data see Construction Daily

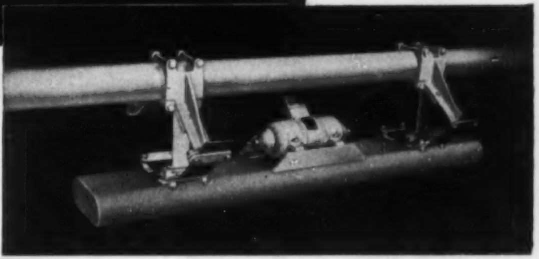
SURFACE and INTERNAL VIBRATION

for CONCRETE PAVING



INTERNAL TYPE

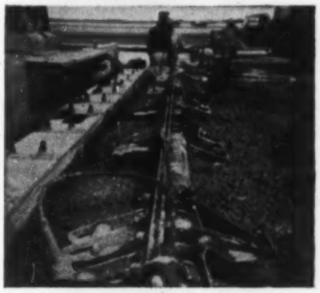
Tubes vibrate deep in concrete. One unit, as shown, for each 5'-0" (maximum) of slab width. Usually attached to front of finisher.



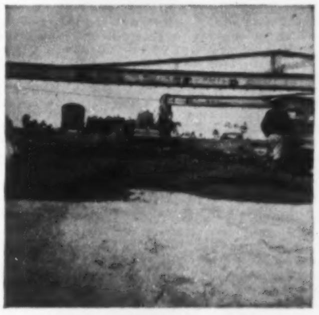
SURFACE TYPE

Tube vibrates on surface. Accomplishes thorough densification of 10" concrete slabs. One unit, as shown, for each 6'-0" (maximum) of slab width. Usually attached to rear of spreader.

JACKSON GIVES YOU BOTH!



A 25', 5-motor Tube of the internal type quickly plasticizing a tough mix on thick slab construction.



On this job, on which no spreader was used, the Paving Tube materially reduced the cost of spreading concrete.

The contractor who owns a Jackson Paving Tube can quickly switch from INTERNAL to SURFACE vibration, or vice versa, and meet any concrete slab specifications — at a minimum of equipment investment.

Supplied with extraordinarily powerful motors, the JACKSON INTERNAL Paving Tube will thoroughly vibrate all concrete slabs as thick as 24" and as wide as 25', quickly plasticizing the very dry, harsh mixes. Attached to a standard finisher, its use materially reduces spreading labor where no spreader is used. Adapted to SURFACE vibratory operation, it will do a perfect job of vibrating any mix in depths up to 12". Powered by a Jackson Portable Power Plant mounted on parent equipment and controlled by its operator.

For better results and lowest possible costs buy a JACKSON Vibratory Paving Tube. See your Jackson distributor or write for complete details.

In this view note the highly plastic condition of the concrete accomplished by the surface type Paving Tube towed by the spreader.

JACKSON VIBRATORS, INC.
LUDINGTON MICHIGAN

Bids: September 16, 1954

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 16th day of September 1954, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, N. F. Ronan, Acting District Engineer, 353 Broadway, Albany, N. Y.						
Albany	M.T 54-5	New York State Thruway–Mohawk Section–Subd. 2 (So. Schenectady Gas Station–Restaurant Site) (Type C)	....	Grading, Paving & Misc. Work	$9,500 Plans $10	$169,000
Albany	FAC 54-8	Albany City: Riverfront Arterial Highway (Cont. 1) Proj. U-712(5)	0.71	9″ Cem. Conc. Pavt. 2 @ 24′ Wide = 0.44 Mi. Misc. Work = 0.27 Mi.	70,000 Plans $15	1,297,000
Saratoga	G.P. 54-1	Geyser Park (State Reservation at Saratoga)	0.15	Found. Crse. Gravel R.C. Twin Closed Box Br. 30′	$1,300 Plans $10	24,000
Saratoga	T.C. 54-3	City of Mechanicville; Central Ave. (South St. to Frances St.) FAC 53-15	0.37	Traffic Signal System	$450 Plans $10	8,000
Washington	R.C. 54-96	Sandy Hill-Adamsville S.H. 720	....	48″ Corr. Metal Pipe Culvert	$600 Plans $10	11,000
DISTRICT No. 2, L. Ketchum, District Engineer, 109 No. Genesee Street, Utica, N. Y.						
Montgomery	M 54-5	Dam 6 and Lock 10 Bridge, Cranesville (B.C.)	....	Rehabilitation of Dam & Bridge (Cleaning and Painting)	$1,500 Plans $10	27,500
Montgomery	M.T. 54-4	New York State Thruway–Mohawk Section–Subd. 16 (Pattersonville Gas Station–Restaurant Site (Type B)	....	Grading, Paving & Misc. Work	$10,000 Plans $10	173,000
Montgomery	FASS 54-14	Fort Plain–St Johnsville (C.R. 65) Proj. S-420(1)	0.33	Asph. Conc. Opt. Pl. Girder Br. 4 Spans 3 @ 120′; 1@ 233′	$38,000 Plans $15	688,000
DISTRICT No. 3 William Robinson, District Engineer, Weigh Lock Bldgs Syracuse, N. Y.						
Onondaga	FARC 54-97	Collamer Road, S.H. 348 Proj. F-U-994(4) Cont. 2	....	Installing Electric Lighting Facilities	$1,100 Plans $10	21,000
DISTRICT No. 4, E. G. H. Youngmann, District Engineer, Barge Canal Terminal, Rochester, N. Y.						
Orleans	FARC 54-100	Holley–Ridge Road, S.H. 582 Ridgeway–Gaines, Pt. 2 S.H. 8099 Proj; S-408(1); F-181(3)	0.84	Asp. Conc. Opt.= 0.23 M . 9″ Cem. Conc. Pavt. 20′–24′ Wide = 0.47 Mi. Misc. Work = 0.14 Mi. Comp. I-Beam Br. 162′ I-Beam Br. 42.6′	$21,000 Plans $15	388,000
DISTRICT No. 5, C. R. Waters, District Engineer, State Office Building, Buffalo, N. Y.						
Erie	GISP 54-3	Grand Island State Parkway (Access Road to Beaver Island State Park)	0.50	Asp. Conc. Opt.= 0.40 Mi. Pedestrian Path and Misc. Work = 0.10 Mi. Comp. I-Beam Br. 45′ Comp. I-Beam Pedest. Br. 45′	$11,000 Plans $15	205,000
Erie	FASS 54-15	Genesee Road, C. R. 448 Proj. S-295(1)	0.73	Bit. D.S.T. Graded Gravel R.C. Arch Br. 20.4′	$11,000 Plans $10	206,000
DISTRICT No. 8, J. S. Bixby, District Engineer Pleasant Valley Road, Poughkeepsie, N. Y.						
Putnam	TSP 54-4	Taconic State Parkway Sect 3	0.81	Asp. Conc. Opt.	$1,400 Plans $10	25,000
Westchester	R.C. 54-98	Yonkers–White Plains S.H. 5231	0.57	Storm Drain System	$3,700 Plans $10	67,000
Westchester	TSP 54-2	Taconic State Parkway (Hawthorne Traffic Circle)	....	Installing Electrical Lighting Facilities	$700 Plans $10	12,000
DISTRICT No. 9 F. W. Donovan, Dist. Engr. 71 Frederick St., Binghamton N. Y.						
Broome	FGC 54-12	City of Binghamton: Court Street Arterial Highway (Erie & D.L.&W.R.R. Brs.) Proj. UG-344(20)	0.17	Asp. Conc. Opt. R.R. Sep. Plate Girder 77.3′ R.R. Sep. Plate Girder 98.3′	$50,000 Plans $15	881,000
Chenango	FAC 54-13	City of Norwich–North Broad St. Proj. U878(2)	0.73	Asp. Conc. Opt.	$16,000 Plans $10	295,000
Sullivan	FARC 54-101	Bloomingburg–Monticello, Pt 2 & Pt. 1, SH 5457–5510–5510A Port Jervis–Wurtsboro, Pt. 2 SH 8287 Proj. F-FG 495(7)	10.63	Fdn. Crse. Grav.= 9.73 Mi. Asp. Conc. Opt.= 0.27 Mi. 9″ Cem. Conc. Pavt. 24′ Wide = 0.32 Mi. Misc. Work = 0.31 Mi. 2 Hy. Seps. Comp. I-Beam 219.6′ and 273.4′ 1 Br. Twin Conc. Box 30′ 1 RR Sep. Conc. Box 25′	$450,000 Plans $50	8,342,000
DISTRICT No. 10, M. E. Goul, Dist. Engr., Montauk Hwy. at Little E. Neck Rd.; Babylon, L. I.; N. Y.						
Kings	FA BQE54-1	Brooklyn–Queens Expressway Contract 7A Proj. U-1066(15)	1.29	9″ Col. Cem. Conc. Pavt. Var. Wide.= 0.30 Mi. 9″ Cem. Conc. Pavt.= 0.04 Mi. Sheet Asp. Pavt. = 0.57 Mi. Granite Block Pvt.= 0.30 Mi. Misc. Work = 0.08 Mi. 2 Hy. Seps. Steel Stringers 95.1′ & 67.8′	$166,000 Plans $50	3,022,000
Kings	FA BQE54-2	Brooklyn–Queens Expressway Proj. U-1066(14) Cont. 6A	Hy.=0.28 Acc.=0.25	9″ Col. Cem. Conc. Pavt. Var. Wide = 0.19 Mi. Sheet Asp. Pavt.=0.25 Mi. Misc. Work = 0.09 Mi.	$52,000 Plans $50	963,000
Queens	FA GC54-1 FA VWE54-1	Grand Central Parkway Extension Van Wyck Expressway Proj. U741(22), U658(21), U1085(16)	4.37	Miscellaneous work	$9,500 Plans $15	170,000
Nassau	BP54-51 Pt. 2	Atlantic Beach Park District (Genesee Ave. & 6th St.)	....	Beach Protection 4 Stone Groins	5% of Bid Plans $10	710,400

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: October 11, 1954

Construction of Dam

INVITATION TO BIDDERS

Notice is hereby given that sealed bids for the construction of the Lake de Forest Dam will be received by the Spring Valley Water Works and Supply Company at their office in Spring Valley, New York, until two o'clock P.M. Eastern Standard Time on the eleventh day of October, 1954.

The work comprises furnishing materials and performing the labor for the construction of a gravity concrete dam and earth fill dam, roads and bridges.

The Instructions to Bidders, Specifications, Proposal, Contract and Bond, and Plans may be examined at said office or at the office of the Consulting Engineers, Buck, Seifert and Jost, 112 East 19th Street, New York City, and copies thereof obtained upon payment of fifty ($50.00) Dollars for each set. Any bidder, upon returning such set or sets within twenty (20) days after the date on which bids are received and in good condition, will be refunded his payment or else the entire deposit will be forfeited.

The work to be performed is divided into two (2) sections, under which the work is classified according to its character. The principal items of work are as follows:

SECTION A—The construction of a combined earth fill and gravity type dam consisting of a gravity concrete dam section about four hundred (400′) feet long with a maximum height of about sixty (60′) feet, an earth fill dam section about nine hundred and fifty (950′) feet long, intake tower, two (2) fifty (50′) feet long self-regulating spillway crest gates with control chambers and equipment and spillway bridge; relocation of about one thousand one hundred (1,100′) feet of town road and the construction of a fifty (50′) foot clear span bridge.

SECTION B—The construction in the reservoir area of about two and one-tenth (2.1) miles of county and town roads including culverts, permanent type pavements and guard railing.

Bids will be received for Section A only on October 11, 1954.

Bidders will be allowed to bid on one (1) or more sections.

Each proposal must be accompanied by a certified check or bid bond from a reliable surety company in an amount equal to ten (10%) percent of the proposal. The certified check will be retained to pay for any damage or loss to the Owner, or the liability bond will accrue in case the successful bidder shall neglect or refuse to enter into a contract in accordance with his proposal. Acceptance of the bid will be contingent upon the fulfillment of this requirement by each bidder.

The Spring Valley Water Works and Supply Company reserves the right to consider bids for thirty (30) days after their receipt before awarding any contract and the right is reserved to accept any bid or to reject any or all of them.

SPRING VALLEY WATER WORKS
AND SUPPLY COMPANY
By George H. Buck, President
Buck, Seifert and Jost
Consulting Engineers

Bids: September 22, 1954

Indiana Toll Road Commission 309 W. Washington Street Old Trails Building Indianapolis, Indiana

NOTICE TO BIDDERS

Contract C-48
Contract C-49
Contract C-50
Contract C-48 and C-49
Contract C-49 and C-50
Contract C-48, C-49 and C-50

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, September 22, 1954 for the performance of each of the contracts enumerated above.

Contract No. C-48

The grading, drainage, structures and paving of approximately 4.0 miles in Construction Section C-48 of the Indiana East-West Toll Road beginning at the Fawn River at Toll Road Centerline Station 7155+45 in LaGrange County and extending eastwardly to a point about 600 feet west of a County Road at Toll Road Centerline Station 7364+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	308,000 cu. yds.
Borrow	220,000 cu. yds.
10" Reinforced Concrete Pavement	110,500 sq. yds.
Culvert Pipes and Underdrains	3,500 lin. ft.
Cast-in-Place Concrete Piling	3,900 lin. ft.
Concrete for Structures	1,750 cu. yds.
Reinforcing Steel	203,000 lbs.
Fabricated Structural Steel	531,000 lbs.

Contract No. C-49

The grading, drainage, structures and paving of approximately 5.1 miles in Construction Section C-49 of the Indiana East-West Toll Road beginning at a point about 600 feet west of a County Road at Toll Road Centerline Station 7364+00 in Steuben County and extending eastwardly to a point about 2,300 feet west of a County Road at Toll Road Centerline Station 7634+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	522,000 cu. yds.
Borrow	211,000 cu. yds.
10" Reinforced Concrete Pavement	143,000 sq. yds.
Culvert Pipes and Underdrains	5,000 lin. ft.
Cast-in-Place Concrete Piling	3,650 lin. ft.
Concrete for Structures	2,300 cu. yds.
Reinforcing Steel	313,000 lbs.
Fabricated Structural Steel	570,000 lbs.

Contract No. C-50

The grading, drainage, structures and paving of approximately 4.0 miles in Construction Section C-50 of the Indiana East-West Toll Road beginning at a point about 2,300 feet west of a County Road at Toll Road Centerline Station 7634+00 in Steuben County and extending eastwardly to a point about 4,300 feet east of U.S. Route 27 at Toll Road Centerline Station 7847+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	1,290,000 cu. yds.
10" Reinforced Concrete Pavement	132,000 sq. yds.
Culvert Pipes and Underdrains	7,500 lin. ft.
Cast-in-Place Concrete Piling	4,620 lin. ft.
Concrete for Structures	4,800 cu. yds.
Reinforcing Steel	707,000 lbs.
Fabricated Structural Steel	900,000 lbs.

The work covered by Contracts C-48, C-49 and C-50, which covers a combination of Construction Sections C-48 and C-49, C-49 and C-50, C-48, C-49 and C-50, is the construction as above described for the individual Construction Sections, taken together.

Copies of the Plans, Specifications and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for the Indiana East-West Toll Road	$ 5.00
Plans, Special Provision and Proposal Forms, per set, per Construction Section	$25.00
Informational Drawings	
Cross-Sections, per set, per Construction Section	$25.00
Soil Plan and Profiles, per set, per Construction Section	$ 5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualification on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) per cent of the total price bid per Construction Section covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Section, the Construction Section thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A.M. Central Standard Time, September 22, 1954, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger Chairman
Charles W. Keating Secretary-Treasurer

Bids: September 28, 1954

Construction of Incinerating Plant

CITY OF ALEXANDRIA, VIRGINIA
REFUSE INCINERATING PLANT
NOTICE TO BIDDERS

Sealed proposals will be received by the City of Alexandria, Virginia, at the office of the City Purchasing Agent until 2:00 P.M., September 28, 1954, at which time they will be publicly opened and read and contracts awarded as soon thereafter as practicable, for the construction of a Refuse Incinerating Plant, to be located at Payne and Jefferson Streets, in the City of Alexandria, Virginia.

The work is divided into three Contracts. Each bidder may submit a proposal for any Contract, for all Contracts, or for any combination of Contracts.

Contract A—Building, comprises the construction of the incinerating plant building, of reinforced concrete, structural steel and masonry, including all work not specifically included in other Contracts.

Contract B—Furnaces and appurtenances, comprises the construction of the incinerating furnaces, combustion chambers, subsidence chambers, flues, forced draft equipment and other appurtenant work.

Contract C—Chimney, comprises the construction of a radial brick chimney with firebrick lining, above the concrete foundation.

The Instructions to Bidders, Proposal, Agreement, Specifications, Plans and Form of Performance Bond may be examined at the office of the City Purchasing Agent, Alexandria, Virginia, and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of these Contract Documents may be obtained upon the deposit of $25.00 for each set. The amount of the deposit will be refunded if the documents are returned in good condition within 30 days after the opening of bids.

Each proposal must be accompanied by money or a certified check on a solvent bank or trust company, made payable to the City of Alexandria, Virginia, in an amount not less than five per cent (5%) of the total bid.

Bidders must be registered as Contractors in the Commonwealth of Virginia as required under Chapter 7, Title 54, of the

Code of Virginia of 1950.

The City reserves the right to waive any informalities in or to reject any or all bids and to accept the bid which it deems most favorable to the interest of the City after all bids have been examined and canvassed.

City of Alexandria, Virginia
(Signed) W. M. TOPPING
Purchasing Agent

Dated: August 25, 1954
Alexandria, Virginia

Bids: September 30, 1954

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Standard Time, the 30th day of September 1954, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract.

For the construction of structures and the grading, drainage and paving of the Turnpike Section 35-E, part of the Northeastern Extension of the Pennsylvania Turnpike in Franconia and Salford Townships, Montgomery County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point approximately 2391.5 lin. feet southeast of the centerline of Legislative Route 270 at Turnpike station 719+00 in Franconia Township, Montgomery County; thence in a northwesterly direction 25,855 feet to Turnpike station 977+55, at a point approximately 2,555 feet northwest of the centerline of the presently existing Township Road 447 in Salford Township, Montgomery County, a distance of approximately 4.90 miles.

The approximate quantities of the principal items are as follows:

Class 1 Excavation	1,089,594 cubic yards
Class 2 Excavation	18,051 cubic yards
Class 2A Excavation	4,111 cubic yards
Special Subgrade	211,591 square yards
Reinforced Concrete Pavement	135,217 square yards
Class A Concrete	3,384 cubic yards
Class B Concrete	5,446 cubic yards
Plain Steel Bars	998,187 pounds
Fabricated Structural Steel—including Steel Beam Piling	2,142,540 pounds
Median Divider	25,024 lineal feet

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on September 15, 1954. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50) dollars per set.

Plans and contract documents, for this section exclusive of cross-sections and specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE
COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
31 August 1954

OFFICIAL PROPOSALS

Bids: September 29, 1954

Indiana Toll Road Commission 309 W. Washington Street Old Trails Building Indianapolis, Indiana

NOTICE TO BIDDERS

Contract C-42/43
Contract C-44/45
Contract C-46/47
Contract C-42/43 and C-44/45
Contract C-44/45 and C-46/47
Contract C-42/43, C-44/45 and C-46/47

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, September 29, 1954 for the performance of each of the contracts enumerated above.

Contract C-42/43

The grading, drainage, structures and paving of approximately 2.8 miles in Construction Section C-42/43 of the Indiana East-West Toll Road beginning at a point adjacent to the Fawn River at Toll Road Centerline Station 6490+50 in LaGrange County and extending eastwardly to a point about 1,160 feet east of Weiland Road at Toll Road Centerline Station 6648+00 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	175,000 Cu. Yds.
Peat Excavation	45,000 Cu. Yds.
Borrow	1,020,000 Cu. Yds.
10″ Reinforced Concrete Pavement	98,000 Sq. Yds.
Culvert Pipes and Underdrains	6,000 Lin. Ft.
Steel Piling	25,000 Lin. Ft.
Concrete for Structures	6,000 Cu. Yds.
Reinforcing Steel	800,000 Lbs.
Fabricated Structural Steel	1,750,000 Lbs.

Contract C-44/45

The grading, drainage, structures and paving of approximately 4.4 miles in Construction Section C-44/45 of the Indiana East-West Toll Road beginning at a point about 1,160 feet east of Weiland Road at Toll Road Centerline Station 6648+00 in LaGrange County and extending eastwardly to a point about 4,030 feet east of State Route No. 3 at Toll Road Centerline Station 6879+00 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	530,000 Cu. Yds.
Peat Excavation	85,000 Cu. Yds.
Borrow	135,000 Cu. Yds.
10″ Reinforced Concrete Pavement	131,000 Sq. Yds.
Culvert Pipes and Underdrains	5,000 Lin. Ft.
Steel Piling	9,000 Lin. Ft.
Concrete for Structures	3,500 Cu. Yds.
Reinforcing Steel	500,000 Lbs.
Fabricated Structural Steel	850,000 Lbs.

Contract C-46/47

The grading, drainage, structures and paving of approximately 5.2 miles in Construction Section C-46/47 of the Indiana East-West Toll Road beginning at a point about 4,030 feet east of State Route No. 3 at Toll Road Centerline Station 6879+00 in LaGrange County and extending eastwardly to a point adjacent to the Fawn River at Toll Road Centerline Station 7155+45 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows.

Common Excavation	380,000 Cu. Yds.
Peat Excavation	55,000 Cu. Yds.
Borrow	145,000 Cu. Yds.
10″ Reinforced Concrete Pavement	146,000 Sq. Yds.
Culvert Pipes and Underdrains	7,000 Lin. Ft.
Steel Piling	7,500 Lin. Ft.
Concrete for Structures	3,800 Cu. Yds.
Reinforcing Steel	500,000 Lbs.
Fabricated Structural Steel	1,050,000 Lbs.

The work covered by Contracts C-42/43 and C-44/45; C-44/45 and C-46/47; and C-42/43, C-44/45 and C-46/47, which cover combinations of Construction Sections C-42/43, C-44/45 and C-46/47 is the construction as above described for the individual Construction Sections, taken together.

Copies of the Plans, Specifications and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for the Indiana East-West Toll Road	$ 5.00
Plans, Special Provisions and Proposal Forms, per set, per Construction Section	$25.00
Informational Drawings	
Cross-Sections, per set, per Construction Section	$25.00
Soil Plan and Profiles, per set, per Construction Section	$ 5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualifications on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) percent of the total price bid per Construction Section covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Section, the Construction Section thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A.M., Central Standard Time, September 29, 1954, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger
Chairman
Charles W. Keating
Secretary-Treasurer

Bids: September 21, 1954

Board of Water Supply Contract 419

HEATING AND VENTILATING EQUIPMENT

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M. Eastern Standard Time, (11:00 A.M., Eastern Daylight Saving Time), on Tuesday, September 21, 1954, for Contract 419, for furnishing, delivering, installing and testing heating, ventilating and appurtenant equipment for the Neversink intake chamber, located in the Town of Neversink, Sullivan County, New York, and the East Delaware intake and Downsville release water chambers, located in the Town of Colchester, Delaware County, New York, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of The City of New York, in the amount of ten thousand dollars ($10,000.00), for the proper execution of the Contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1316, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

U. S. Government

St. Paul District, Corps of Engineers, U. S. Army 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this Office until 2:00 P.M., C.S.T., 23 September 1954, and then publicly opened for Replacement of Boule Dam at Locks and Dam No. 2, Hastings, Minnesota.

OFFICIAL PROPOSALS

Bids: October 19, 1954

Demolition of Pier 78 and Incidental Construction

THE PORT OF NEW YORK AUTHORITY
LINCOLN TUNNEL—THIRD TUBE
CONTRACT LT-160.033

Sealed proposals for the demolition of Pier 78 and incidental construction at the foot of West Thirty-Eighth Street, New York, New York will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 19, 1954, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 719, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of the documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, September 9, 1954

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4246) will be received at Ephrata, Washington, until September 30, 1954, for furnishing labor and materials for earthwork and structures, Lateral W20, Station 1+24.94Ah. to Station 85+50, Naylor Siphon, West Canal Laterals, Block 89, Columbia Basin Project. Location near Ephrata, Grant County, Washington. Principal items are:

Monolithic siphon	Precast concrete pipe siphon	
78,000 c.y.	61,500 c.y.	Excavation, common and rock
7,640 c.y.	410 c.y.	Concrete, structures and lateral lining
	7,487 l.f.	102-in. dia. precast concrete pipe
9,630 l.f.	390 l.f.	Rubber waterstops
2,410 lb.	2,410 lb.	Miscellaneous metalwork

and other work. Completion time 720 days. For particulars, address Bureau of Reclamation, Ephrata, Washington; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

Department of Commerce, Bureau of Public Roads, August 27, 1954. SEALED BIDS will be received at the office of the District Ranger, United States Forest Service, Ava, Missouri, until 11:00 a.m., C.S.T., SEPTEMBER 30, 1954, for the construction of Missouri Forest Highway Project 49-A, Christian County, Missouri. Grading, Draining, Gravel Surfacing, two Reinforced Concrete Bridges and other work on the Keltner Road from Oldfield to about 3 miles northwest of Merritt. Length 10.055 miles. The approximate quantities of the more important items are 221,328 cu. yd. Excavation, 736 cu. yd. Cement Concrete, 8,700 cu. yd. Gravel, 3,418 lin. ft. Metal Culvert Pipe and 146,091 lb. Reinforcing Steel. Minimum wage rates have been fixed as required by law. Plans, specifications and proposal forms are available upon request at the Bureau of Public Roads at either 115 Nevada Street, Hot Springs, Arkansas, or at 1440 Columbia Pike, Arlington, Virginia. Plans and Specifications may be examined at the Ranger's office in Ava, or the Forest Supervisor's office, Rolla, Missouri. H. J. Spelman, Division Engineer.

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WANTED: EXPERIENCED concrete reinforcing bar designer, checker, detailer. Salary based on experience and ability. Employee benefits. Southern Engineering Company, Box 1087, Charlotte 1, N. C.

CONCRETE FOREMAN—Experienced man to handle concrete crew for curb & gutter, sidewalk and paving jobs in suburban Maryland area of Washington, D. C. Write Princemont Const. Corp., P. O. Box 229, Silver Springs, Md.

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(Continued on page 78)

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(Continued from preceding page)

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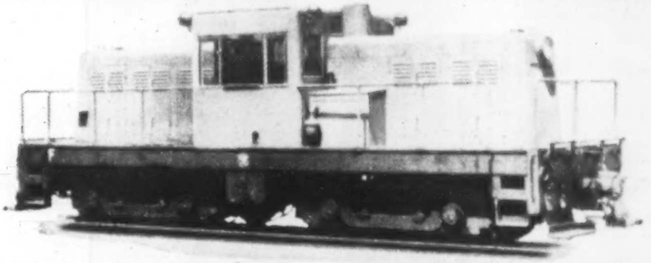

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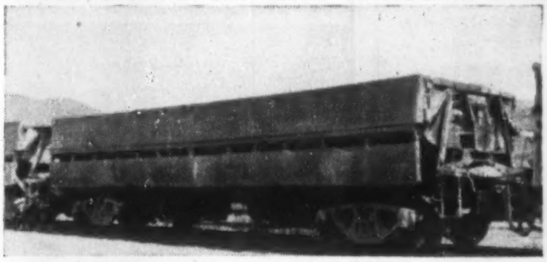

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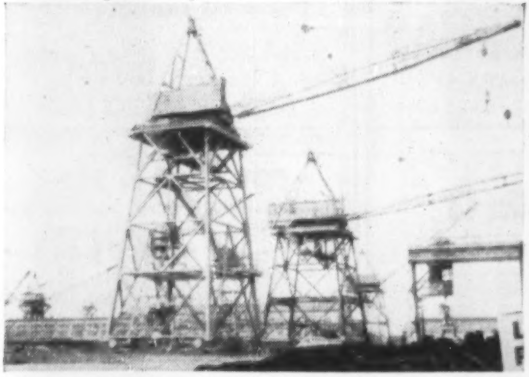

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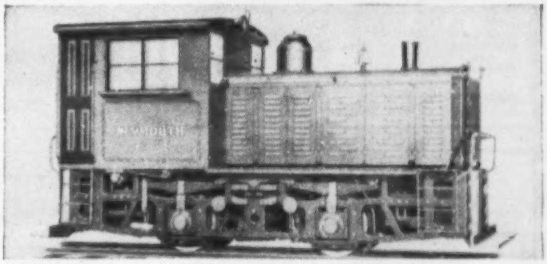

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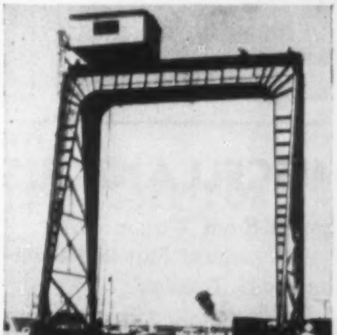

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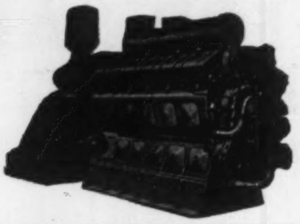

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1000	General Motors	16-567B	1440	720	300	General Motors	8-268A	450	1200
750	General Motors	12-567	1080	720	200	General Motors	8-268A	350	900
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500	General Motors	8-278A	750	720	150	Ingersoll-Rand	S-4	225	600
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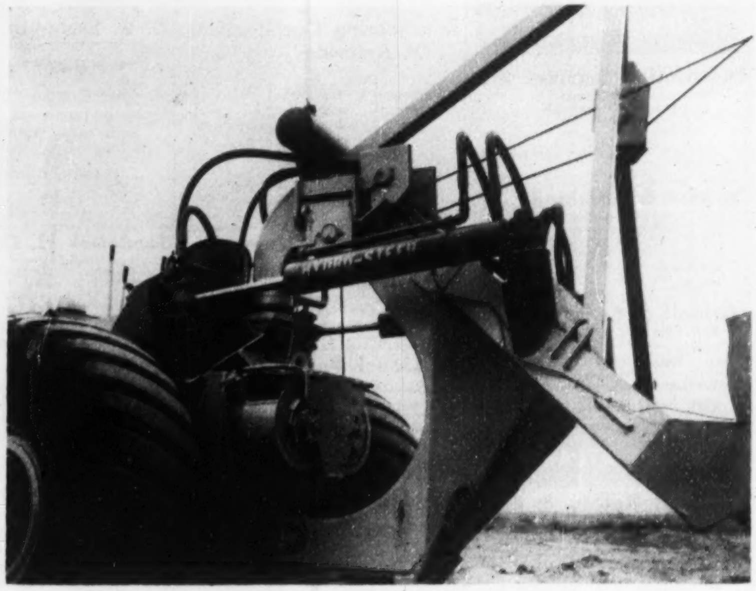

Super C's get hydraulic steering

Positive hydraulic control in steering becomes automatic on LeTourneau Super C Tournapulls fitted with Shepherd Hydro-Steer. This unit, consisting of heavy-duty hydraulic rams mounted between the tractor and scraper, affords directional control through two single-action hydraulic systems which permit change in ram position only when regular operator controls are actuated, and only in the desired direction.

Self-contained and requiring no engine power, the Hydro-Steer reportedly will hold the Super C in a straight line regardless of wheel slippage, grade, over-pushing, or operator inattention, and full engine power for traction and full braking of both drive wheels becomes available under all conditions. Furthermore, jackknifing and inadvertent control reversal are said to be eliminated and machine capacity increased under adverse conditions.

The Hydro-Steer unit is available as an inexpensive, complete kit that can be installed with regular welding equipment. Standard operator controls remain the same and require no change in method of operation. SHEPHERD TRACTOR & EQUIPMENT CO., ATLANTIC & BANDINI BLVDS., LOS ANGELES 22, CALIFORNIA.

Kit splices cables without heat

Factory-perfect cable splices under field conditions are promised with a new splicing and insulating method. The new method involves embedding the splice in liquid epoxy resin that hardens into a hermetically sealed casting. No heat is required.

Used in convenient kit form, it allows the workman in the field to turn out, a tough, plastic-jacketed splice that is said to be insulated against moisture, corrosion and electrical leakage.

Basis for the new method is the firm's "Scotchcast" electrical embedment resin No. 4 now available in a unique, plastic, mixing envelope—the "Unipak" container—which provides a virtually foolproof method for mixing resin and hardener in exactly the right proportions.

Previously, use of the epoxy-type resins has been limited to the carefully controlled conditions of the manufacturer's plant where they have been employed for embedding coils and other electrical components for critical applications.

However, with the introduction of the new kit—"Scotchcast" splicing kit No. 82A—splices cast in epoxy resin can be made anywhere. Applications to date have included street

(Continued on page 88)

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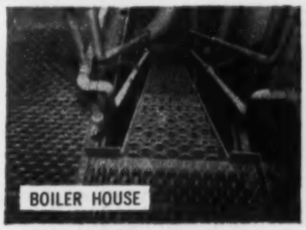

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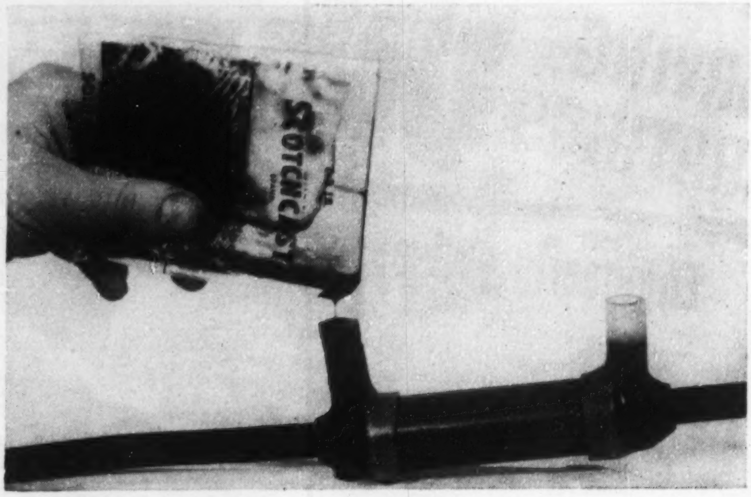

and airport lighting cable, communications cable, and splices in insulated conductors above, and underground, as well as submerged in water.

All materials necessary for making a complete cast splice in single conductor cable from wire sizes 10 to 4 AWG are included in the kit; no tools are required other than a pocket knife. Each kit makes one complete splice and includes a supply of resin and hardener; a three-piece vinyl plastic single-use mold; two different-sized "Scotchlok" electrical spring connectors; a strip of abrasive cloth for cleaning the conductor; and an instruction sheet.

In use, the mold pieces are slipped on the ends of the wire, the insula-

(*Continued on page* 91)

Rear dump wagon has 25-yd capacity

The Sierra Movall is a new cable-operated rock and dirt wagon that—with interchangeable goosenecks—is adaptable to use with DW20 or DW21 tractors. Capacity is 19 cu yds struck, 25 cu yds heaped; maximum carrying capacity is 31 tons. Principal features include an 11x19-ft target area for easier shovel loading; positive cable-controlled ejection; controlled spreading. Ability to dump from a jack-knifed position and independently controlled air brakes that permit locking either tractor or wagon wheels, or both, are said to add to dumping speed and safety. The wagon is constructed of high tensile steel with a "sandwich" bottom consisting of a ¾-in. top plate, 2-in. hardwood layer and a ½-in. bottom plate. Interior surfaces are protected by replacable abrasion-resistant wear strips. Shipping weight, less tractor, is 29,750 lb. C & D Mfg. Co., Perkins, Calif.

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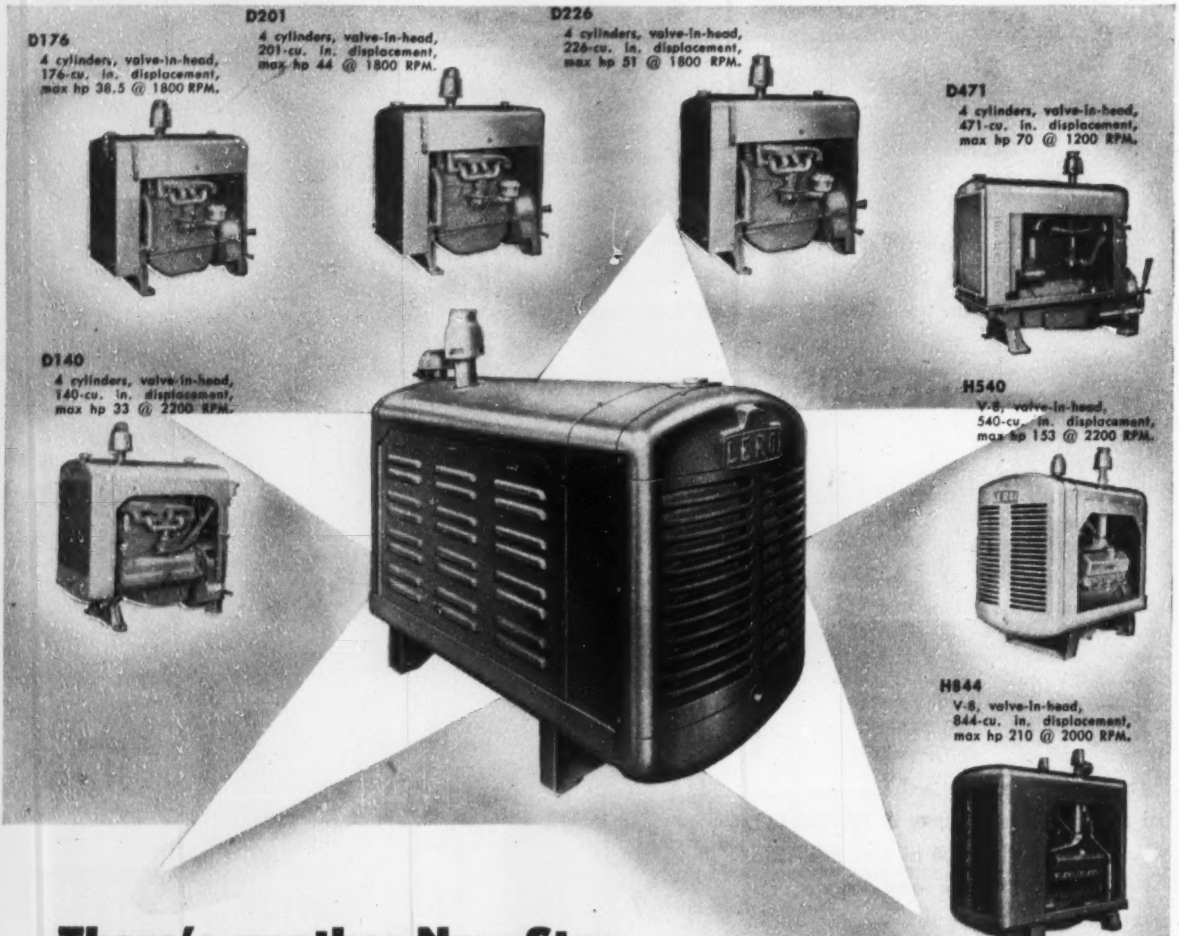
D176
4 cylinders, valve-in-head, 176-cu. in. displacement, max hp 38.5 @ 1800 RPM.
D201
4 cylinders, valve-in-head, 201-cu. in. displacement, max hp 44 @ 1800 RPM.
D226
4 cylinders, valve-in-head, 226-cu. in. displacement, max hp 51 @ 1800 RPM.
D471
4 cylinders, valve-in-head, 471-cu. in. displacement, max hp 70 @ 1200 RPM.
D140
4 cylinders, valve-in-head, 140-cu. in. displacement, max hp 33 @ 2200 RPM.
H540
V-8, valve-in-head, 540-cu. in. displacement, max hp 153 @ 2200 RPM.
H844
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Here it is, Le Roi's new 330-cu. in. engine, the F330.

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tion penciled down and the spring connector turned on with the fingers. After pulling the plastic mold units into place over the connection, the inner partition in the "Unipak" container is ruptured by squeezing, and the resin and hardener thoroughly mixed by kneading the contents.

When the resin assumes a uniform color, a corner is snipped off the envelope and the activated resin poured into one of the spouts on the mold. The resin sets up within 5 to 15 minutes—depending on the temperature. The plastic mold is left in place since it provides added protection. The entire operation takes from 10 to 20 minutes and backfilling may begin immediately after pouring if desired.

Average properties of the resin used in the kit include a dielectric strength of 800 volts per mil thickness in 10 mil films; an electrolytic corrosion factor of 1.0; a dielectric constant and dissipation factor at 30 degrees C. of 7.2 and .019 respectively; and, good resistance to water, oil, solvents and weathering. The material is self extinguishing. MINNESOTA MINING & MANUFACTURING CO., 900 FAUQUIER ST., ST. PAUL 6, MINN.

Spring steel anchor holds bolts in masonry materials

Recently placed on the market, is an expansion anchor for use in brick, concrete, block, hollow tile or any type of material. It can also be used in glass, marble or plastic material.

The anchor proper is made of a spring steel in sizes to fit any standard bolt. The anchors can also be used in place of toggle bolts.

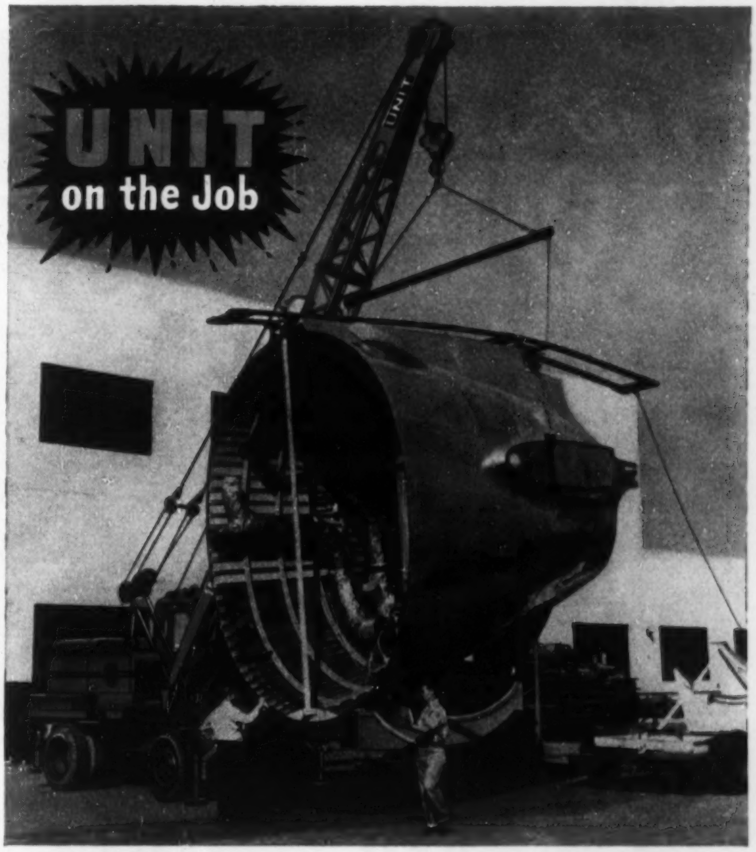
The anchor fits onto the bolt or machine screw, and as the nut is tightened the anchor expands within the drilled hole. WYEM PRODUCTS CO., 2292 S. TAYLOR ROAD, CLEVELAND 18, OHIO.

Vickers extends hydraulic steering pump lines

Two new pump series for hydraulic steering systems are now in general production. Series VT16 consists of a Vickers vane type hydraulic pump, flow control and overload relief valves and integral oil reservoir. Series VT16 comprises identical pump and valve units without the reservoir and is designed for installations where a separate tank is preferred.

The Series VT16 power package is designed for use with a hydraulic steer-

(*Continued on page 92*)



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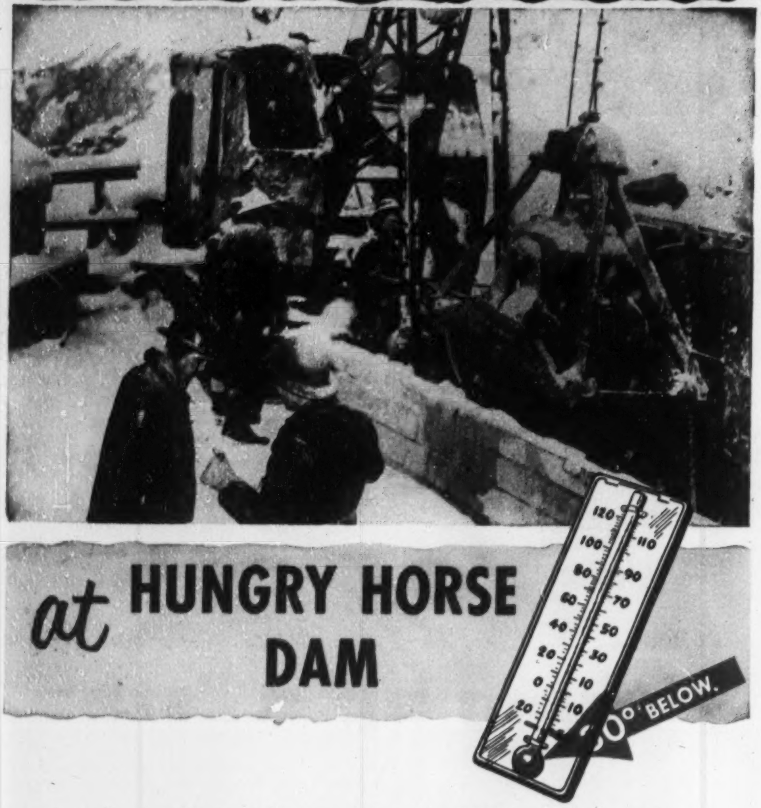

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ing booster to form a complete power steering system with the simplest possible installation. The unit need only be bolted on, coupled to the engine usually by belts, and two hydraulic connections made to the booster. Overload protection is built in. Exceptionally smooth steering performance is said to be obtained with the flow control valve that insures a smooth and relatively constant supply of oil to the booster irrespective of engine speed variations.

Other features claimed for the Series VT16 pump include long life, no load starting and automatic maintenance of optimum running clearances for continuous high efficiency. Series VT16 and VT17 power packages are available in three factory-set flow control capacities, 1½, 2½ and 3 gpm. Vickers Inc. 1496 Oakman Boulevard, Detroit 32, Mich.

Air-operated shear is light in weight, compact

A new air-operated shear has been developed for cutting reinforcing bars and cables to size—either on the construction job or in prefabrication operations. Compared to a conventional motor-operated shear, the air shear is said to weigh less than half as much and occupy only one-quarter the floor space.

The unit operates from any standard compressor or shop air supply at pressures from 60 to 125 psi and has no motors or gears to maintain. Unlike other alligator shears, it operates only while cutting, thereby offering additional economy and safety.

Designated the Curry Air Shear Model A, the unit has 6" knives, with 4 cutting edges, that can be adjusted by set-screws after grinding. The shear, which is operated by a foot treadle, remains closed, in a safe position, when not cutting. Overloading in no way harms the equipment, since the limiting factor is the pressure in the air cylinder. The shear is designed so that the operating air is lubricated and filtered before it enters the valve or cylinder to further reduce maintenance costs.

The shear will cut 1" diameter cold mild steel at 80 psi air pressure. Normal speed is 2 seconds per cycle, but provisions can be made for faster speeds if desired. The unit is 3'2" high, 15" wide and 36" deep, and may be mounted on casters for convenient handling. Jaws, which open 2¾", are located 30" above the floor. Curry Air Shear Corp., 941 Oliver Bldg., Pittsburgh 22, Pa.

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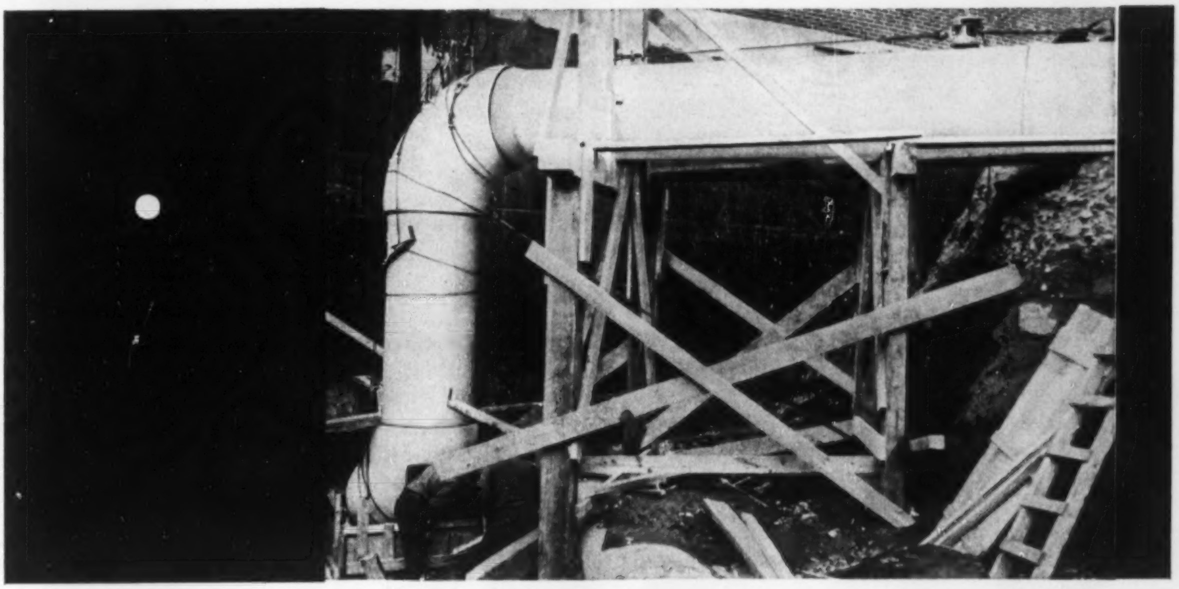

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EDITORIALS

Have a seat

SITTING DOWN AND WORKING, for some reason, have always been considered incompatible activities. Or if the job is of the sit-down variety, an uncomfortable seat seems to be a sort of badge of efficiency. Opposition to such an outrageous state of affairs is long overdue. Therefore, when our British contemporary THE ENGINEER throws down the gauntlet and enters the lists to fight for better seating, we applaud its words of wisdom, and import a few of them for the wholesome influence that they may exert.

Says THE ENGINEER: "There are, of course, people in this world who expect their employees when at work not only to work hard but also to look as if they are working hard. That, no doubt, is one of the reasons why so much machinery and so many appliances continue to be designed for people standing up instead of sitting down.

"Yet, in fact, what is there wrong in making people as comfortable as possible at work? There was a time, was there not, when the drivers of omnibuses sat on uncomfortable boards with no more protection from the inclement elements than a multiplicity of overcoats and a stretched piece of canvas could afford. We cannot say that we have observed any noticeable falling away in their driving skill since they have been shut away in warm glass cubicles and seated upon upholstered comfort; though, no doubt, their powers of caustic comment upon others' driving has suffered now that they are less audible than they used to be."

THE ENGINEER further notes that when seats are not available, all kinds of substitutes are pressed into service—"upturned boxes, oil drums and barrels, all of which surely could have been turned to some more suitable purpose and none of which can have really been comfortable. Then there was the operator observed sitting on the edge of an opened drawer which can hardly have been designed to carry such a cantilevered load."

To the argument that even when seats are provided workers sometimes scorn to use them, THE ENGINEER replies that it is probably not that they don't like to sit down but that "something is wrong with the seat." And even in those cases where a worker avoids a comfortable, well-placed seat there is usually a good reason, as when "girls in a modern ice cream factory were observed sitting on milk cans: it was a cold day and the cans were filled with warm water."

All of which leaves the arguers against seated-comfort-at-work with no leg to stand on, which is what they deserve. Many construction machines have admirable seating arrangements, others have abominable ones and some few, which could use a seat, have none at all. It may also be noted that many draftsmen still sit on backless stools. The fact is that there are still too many people standing around—or sitting with effort. Let's give them a seat, and make it as comfortable as possible. The few who go to sleep will be outnumbered by those who work more efficiently.

Less costly spillway paving

THE USE OF SOIL-CEMENT to pave the spillway aprons of two flood-control dams in Riverside County, Calif. (ENR Aug. 5, p. 32) deserves more than passing notice. That method for reducing the cost of emergency spillways for flood-control dams could be of material help in reducing the cost of obtaining greater stability in small dams. And this is important, since hundreds of such dams probably will be built under the federal-state headwater control program.

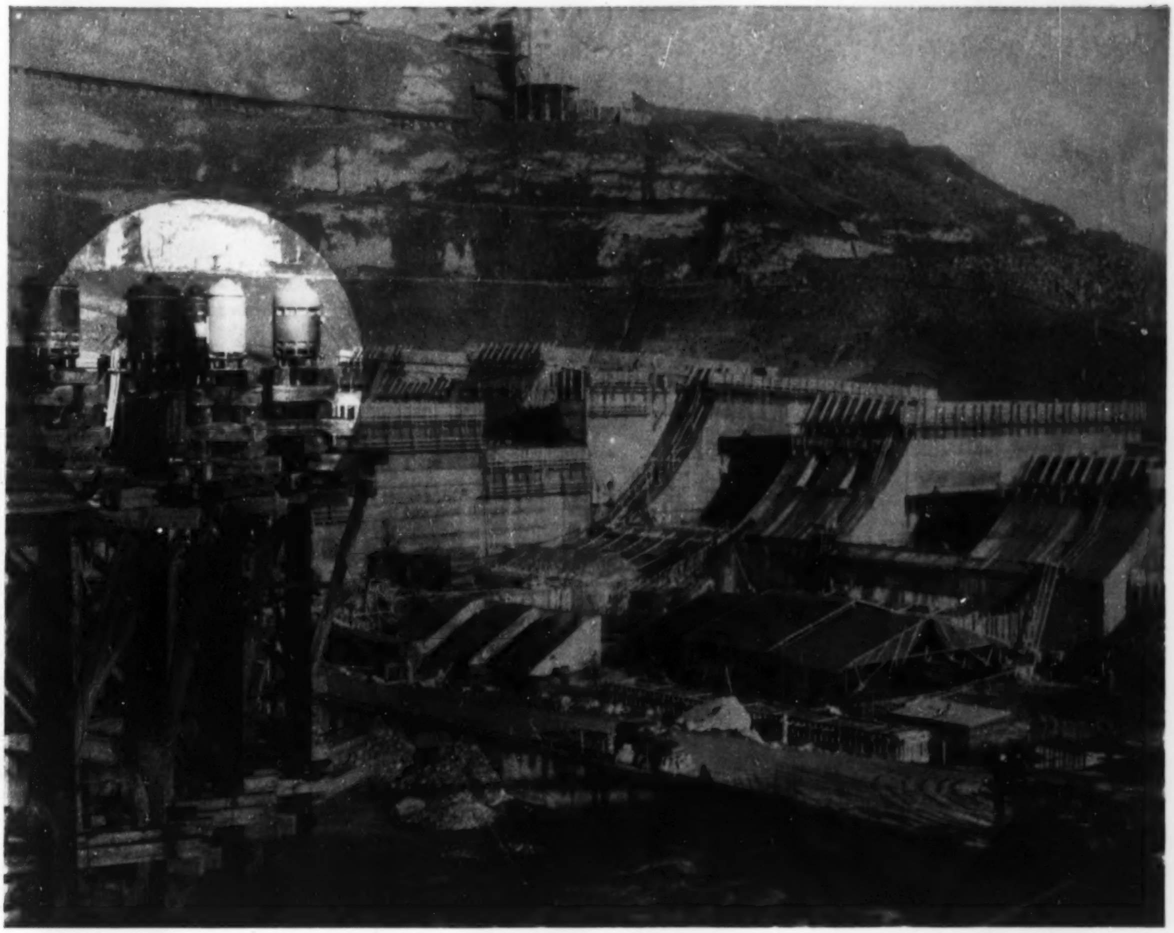
This program was inaugurated by Congress back in 1944 and now has been given new life by the Watershed Protection and Flood Prevention Act just passed by Congress (ENR Aug. 12, p. 26). From all indications headwater control work is now an integral part of flood-control and water-conservation planning and so can be expected to continue through many years.

The dams that are to be built are relatively small and usually of earth. Typical examples of those built under the 1944 act were described in ENR Nov. 12, 1953, p. 24. Normally each structure has a simple uncontrolled outlet of the drop-inlet type. To keep down the cost, these are designed to carry only normal flood flows. Emergency flows are passed through side spillway channels, which, on the smaller projects, are only sodded as a protection against erosion during the infrequent times they will come into use. For the larger structures where the quantity of water to be passed is substantial, or where the risk of complete loss of the dam is greater, some more substantial protection is desirable.

Soil-cement paving appears to provide one of these more substantial protective covers. Others of potentially equal merit could probably be provided by a combination of lime and fly ash, by bituminous mixtures and possibly other stabilization materials. All are less costly than concrete slabs, and none requires exceptionally experienced labor for their construction.

Actually, the usefulness of such soil stabilization methods of spillway protection may not be limited to the field of small dam construction. They might well be used for spillway channels of larger dams where spilling of flood waters will be infrequent and of relatively short duration. Full-scale tests of the resistance of such mixtures to erosion, which could be made at some such place as the Vicksburg Waterways Experiment Station, would be most useful and provide valuable information as to conditions under which this type of paving could be more widely used.

Small dams, however, offer the principal field of use. And savings here, where projects may number in the hundreds, are well worth seeking.



Joseph, Chief of the Nez Perce, was a mighty tough Indian...

and his namesake, big Chief Joseph Dam has also given the palefaces plenty of headaches. The engineers building it have waged a continuous battle against the Columbia River . . . its tremendous seasonal flows . . . its solid rock bottom . . . the pervious nature of its banks. The dewatering problem, too, is king sized. Rain and seepage could be costly . . . even dangerous.
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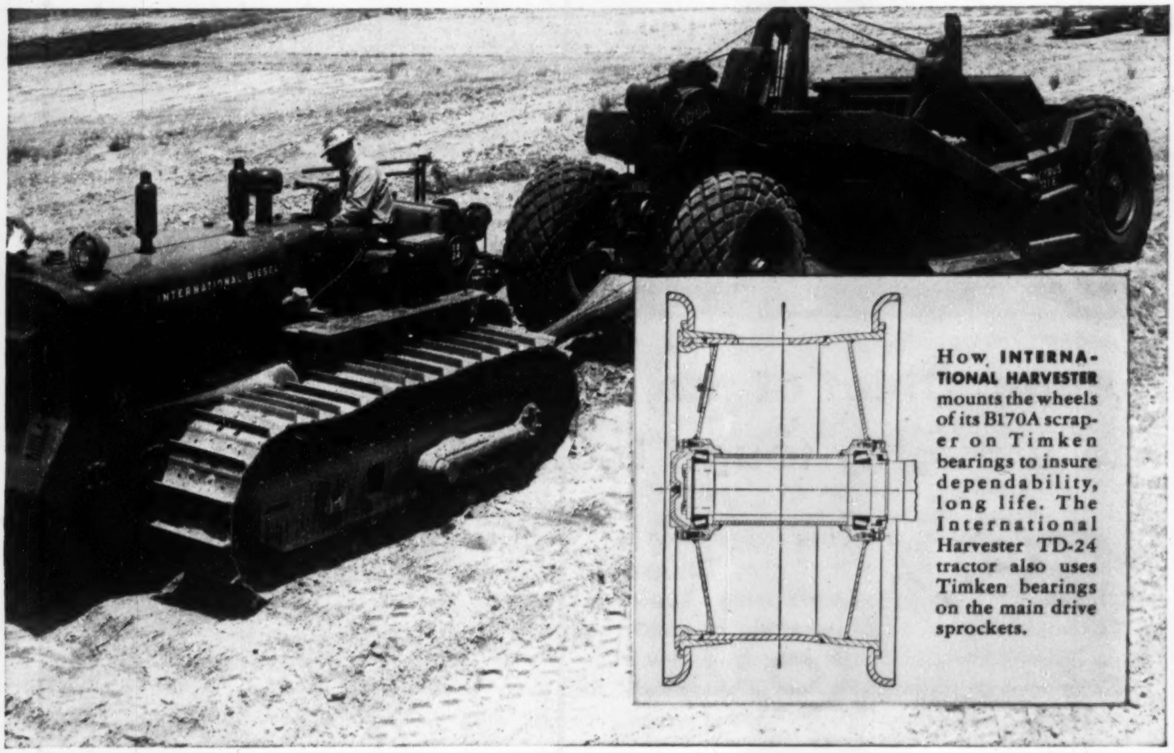

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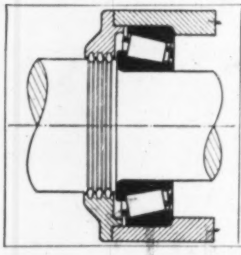

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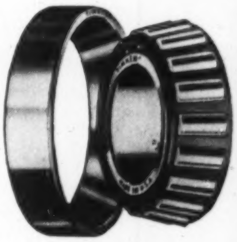

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